

Carbohydrate Counting

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What is carbohydrate counting?

Carbohydrate (carb) counting is one way to identify the amount of carbohydrates you get from the foods you eat. Carbohydrate counting can help you manage your blood-glucose levels in different ways, depending on what type of diabetes you have and your treatment plan.

Food is a combination of protein, fats, and carbohydrates. Carbohydrates, which include sugars and starches, have the greatest effect on blood glucose. However, protein and fat impact how fast the food is digested, which impacts blood-glucose levels. Eating balanced meals and snacks throughout the day can support steady blood-glucose levels.

Carbohydrates are found in all plant foods (for example, fruits, vegetables, grains, beans, and peas). Sweets such as candies, cakes, cookies, and sugar-sweetened drinks also contain carbohydrates. Many of these carbohydrates are in the form of added sugar, which will create a spike in blood-glucose levels. Minimize added sugar and prioritize whole grains, fruits, vegetables, and lean protein throughout the day.

Steps of carbohydrate counting

To begin, recognize common foods that contain carbohydrates. These include:

- Grains (rice, corn, wheat, oats, bulgur, and quinoa) and grain-based foods, like bagels, breads, cereals, crackers, biscuits, pastas, and tortillas
- Beans (red, navy, black, garbanzo, and pinto beans) and soy products (tofu and edamame)
- Starchy vegetables (potatoes, corn, peas, winter squash, and pumpkins)
- Fruits (fresh, frozen, canned, and dried) and fruit juices

- Milk and yogurt
- Others
 - Sweets such as candies, jams, and jellies
 - Snack foods such as chips and pretzels
 - Desserts such as cookies, pies, ice cream, and puddings
 - Sugary drinks such as sodas, juice drinks, and sweet tea

Next, identify a serving of carbohydrate foods. For carb-counting purposes in diabetes management, a serving of carbohydrates equals 15 grams. The Nutrition Facts label tells how many grams of carbohydrates are in one serving of packaged food.

Count one serving of combination foods like pizza, casseroles, and soups as two carbohydrate servings, or 30 grams of carbohydrates.

Knowing what foods are considered “carb-free” is also important. These “carb-free” foods are not counted toward the carbohydrate total:

- Sugar-free soft drinks, unsweetened tea or coffee (no milk added), gelatin, and broth
- One cup of raw vegetables or a half cup of cooked, non-starchy vegetables. (However, three or more servings of these “carb-free” foods at one meal count as one carbohydrate serving. For example, if you eat 1½ cups of cooked carrots at a meal, it counts as one carbohydrate serving.)
- Foods that contain less than 20 calories, or five grams of carbohydrates, per serving

Using this information, you can total the amount of carbohydrates in the food you eat. This can be helpful for those who use insulin to manage blood-glucose levels. It is important to also factor in physical activity you may engage in around mealtime for dosage, too.

The total amount of carbohydrates someone should aim for at each meal or snack depends on body size, physical activity level, appetite, and hunger level. Generally, consistent carbohydrate intake throughout the day should be the goal to help manage blood-sugar levels. A registered dietitian (RD) or certified diabetes care and education specialist (CDCES) can help find what works for you.

Using food labels to count carbohydrates

- Reading the food label will tell you how many carbohydrates are in a food. The two most important areas of the Nutrition Facts label for carbohydrate counting are the serving size and total carbohydrate listings.
- The “Total Carbohydrate” line tells you how many carbs are in a serving for the food.
- If you eat more or less than the serving size on the food package, adjust the amount of total carbohydrates to reflect how much you actually ate.

How to calculate carbohydrate servings from the food label

- Look for the serving size on the Nutrition Facts label.
- Find the total grams of carbohydrates; this is the amount of carbohydrates you will get in one serving-size portion of the food. This includes total sugar, added sugar, and fiber in the food.
- If a food has more than five grams of fiber, subtract the grams of fiber from the total carbohydrates. (Although fiber is counted as a carbohydrate, it does not raise blood glucose.)
- Divide the calculated number of total carbohydrates by 15 to determine how many carbohydrate servings are in the meal.

For example:

On the sample Nutrition Facts label (Figure 1), the serving size on the label is 2/3 cup. The total carbohydrates are 37 grams. A serving does not contain five grams of fiber, so do not subtract it from total carbohydrates.

Divide 37 grams by 15 to determine that a 2/3 cup serving of this food would be about 2.5 carbohydrate servings.

Additional meal-planning considerations

- Choose whole-grain products when possible. This includes whole-wheat bread, oatmeal, brown rice, and whole-grain cereals. The first ingredient on the label should be a whole grain.
- Eat five to seven ounces of lean meat or other protein foods such as cooked beans (black, red, pinto, or garbanzo beans, or soybeans) each day.
- Use unsaturated fats such as olive oil and canola oil in salad dressings and for cooking.
- Minimize saturated fat. It is found in animal foods, including meat and dairy products. Reach for lean protein options, including poultry, fish, and lean cuts of beef and pork. Look for the word “roast” or “loin” in the cut.
- Cut back on your sodium intake. Use food labels to identify the sodium content of foods.
- Check your blood-glucose level regularly. Your provider will recommend how often to check.
- Keep a record of the foods you eat and your blood-glucose levels to see which foods cause your blood-glucose levels to rise quickly.
- The amount of carbohydrates a person needs depends on:

Nutrition Facts	
8 servings per container	
Serving size	2/3 cup (55g)
Amount per serving	
Calories	230
% Daily Value*	
Total Fat 8g	10%
Saturated Fat 1g	5%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 160mg	7%
Total Carbohydrate 37g	13%
Dietary Fiber 4g	14%
Total Sugars 12g	
Includes 10g Added Sugars	20%
Protein 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 240mg	6%
* 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.	

Figure 1. Sample Nutrition Facts label. The two most important areas of the label for carbohydrate counting are the serving size and total carbohydrate.

- Body size
- Level of physical activity
- Diabetes medication

Carbohydrate counting is one option for tracking the amount of carbohydrates you are eating. This may be beneficial for someone who doses insulin treatment based on how many carbs are taken in or for someone who is working to eat a steady number of carbohydrates throughout the day. Carbohydrate counting may be a short-term solution for someone who wants to better understand how carbohydrates impact blood sugar or who is working with a health-care provider to establish an ideal medication treatment plan. For some, it may work long-term.

Additional resources are available for planning meals for diabetes. Your health-care provider, a registered dietitian (RD), or certified diabetes care and education specialist (CDCES) can support you in finding what works for you.

Resources

American Diabetes Association. www.diabetes.org/
National Diabetes Education Program. www.ndep.nih.gov

References

- American Diabetes Association. (n.d.). *Carb counting and diabetes* | ADA. <https://diabetes.org/food-nutrition/understanding-carbs/carb-counting-and-diabetes>
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