

Diabetes: Carbohydrate Counting Meal Plan

Carbohydrate counting is a food plan that adjusts your insulin dose based on the amount of carbohydrates you plan to eat. With the carbohydrate counting meal plan, your insulin dosage and amount of carbohydrates are not always the same every day. This plan is more flexible than some other meal plans. It is usually started after you have learned how your body responds to food choices and insulin.

What are carbohydrates?

Carbohydrates, also called carbs, are a source of energy for your body. There are three basic types of carbs: starches, sugars, and dietary fiber.

- Starches are not digested and turned into energy as fast as sugars. Starch is found in plant-based foods such as pasta, bread, cereals, rice, potatoes, beans, and corn.
- Sugars such as glucose and fructose raise blood sugar very quickly. Sugar is found in foods such as fruit, milk, soft drinks, baked goods, and candy.
- Dietary fiber is the part of plants that cannot be digested. Fiber is found in whole-grain bread and pasta, beans, peas, leafy vegetables, raisins, prunes, apples, and berries.

You can find nutrition facts on the food label, in nutrition books or apps for your smartphone or computer, or on the internet. Fifteen grams of carbs equals 1 carb choice. A gram is a way to measure how much something weighs.

Carbs affect your blood sugar level more than protein or fat. If you use insulin, you need to balance how much insulin you take with the amount of carbs you eat. This helps keep your blood sugar at a healthy level and helps prevent many health problems.

How does the carbohydrate counting meal plan work?

The main goal of this meal plan is to balance insulin with the carbs you eat during the day. If you are taking long- and short-acting insulins, you will be adjusting only the short-acting insulin doses.

First, you and your healthcare provider need to figure out how much insulin you need to take for the amount of carbs you plan to eat. There are 2 ways to figure this out:

- **I/C ratio:** Most people use the insulin-to-carbohydrate ratio (I/C ratio). Your dietitian will help you figure out what your I/C ratio should be. You then multiply your I/C ratio by the number of grams of carbs you plan to eat. The I/C ratio multiplied by the grams of carb equals the units of insulin you need.

An example of an I/C ratio is 1 unit of insulin for every 10 grams of carbs. If your I/C ratio is 1/10 and you plan to eat 60 grams of carbohydrate, then you need 6 units of insulin.

- **Units per carb choice (exchange):** You can also count carbs in serving sizes of 15 grams. This is called a carb choice or an exchange. Your provider will tell you how many units of insulin you need for every carb choice that you eat. Units of insulin per carb choice multiplied by the number of carb choices equals the total units of insulin you need.

You will adjust the units of short-acting insulin for every meal to match the number of carb choices you are eating. For example, if you need 1 unit of insulin for every carb choice, then for 3 carb choices, you need 3 units of insulin.

Your insulin dose also depends on exercise, blood sugar levels, illness, and stress. In general, you should take insulin at a time that allows the insulin to start working as your blood sugar starts to get higher. Sugar is absorbed into the blood about 10 minutes after you eat. The peak in blood sugar from food usually happens about 60 minutes after you eat.

Your healthcare provider and dietitian will help you create a schedule for your meals and insulin doses. They can also give you guidelines for adjusting your insulin dose.

Which foods have carbohydrates?

Food groups that have carbohydrates include:

- Starchy foods (breads, cereals, rice, pasta, and starchy vegetables such as corn and potatoes)
- Fruits
- Milk and yogurt
- Sugary foods

Eat only small amounts of sugary foods for a healthy diet. Serving sizes depend on the food. One tablespoon of sugar equals 1 carb choice. A sweetened drink may equal 2 or more carb choices. Check the nutrition facts label on the package to see how many grams of carbohydrate are in a serving.

Meat, fats, and vegetables do not affect your blood sugar in the same way as carbs. However, these foods do count toward your daily calories. Choose healthy kinds of meat and fat, and plenty of nonstarchy vegetables.

- Meats are protein. Eat lean meat and do not eat too much meat.
- Do not eat a lot of fats such as butter, oils, salad dressing, mayonnaise, bacon, and cream cheese.
- Eat nonstarchy vegetables such as lettuce, broccoli, cauliflower, carrots, cucumbers, and celery. These vegetables do not count toward your daily carbs.

How do I get started?

1. Before you start counting carbs, keep a careful record of food, insulin, blood sugar level, and exercise for at least 3 days. Measure and record your blood sugar before meals and 2 hours after meals. Record all doses of insulin or oral medicines you take.

2. Your dietitian will review your records and work with your healthcare provider to decide how much insulin you need to take for the amount of carbs you eat.
3. Start counting carbs and adjust your insulin dose. For the first 1 to 2 weeks carefully record the following:
 - The number of carbs you eat at each meal or snack
 - Your insulin doses
 - Your blood sugar levels, especially 2 hours after meals
4. After a week or two, review your records with your dietitian or diabetes educator to see if any changes need to be made.

For books that help you with carb choices, exchange food groups, and other information to help manage diabetes, contact:

- The American Diabetes Association
<http://www.shopdiabetes.org/Categories/8-Diabetes-Books.aspx>
800-232-6455

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