

Diabetes, Carbohydrates and You

Paying Attention to Carbohydrate

Bulletin #4369

What is carbohydrate?

Carbohydrate foods are sugars and starches. Sugars and starches are in

- milk, yogurt, and milk products;
- grains and grain products (bread, rice, noodles, pasta, cereal);
- vegetables, dried beans, dried peas;
- fruits and fruit juice;
- sugar, honey, corn syrup and molasses;
- sweetened foods such as desserts.

People with diabetes need to pay attention to all foods that contain carbohydrates, not just high-sugar foods.

What do carbohydrates do in the body?

Carbohydrates give you energy to use, or to be stored to use later. Most carbohydrate foods have health-giving vitamins and minerals.

Why should people with diabetes be concerned about carbohydrate?

Insulin moves sugar from the blood into your cells, for the body to use for energy. When you have diabetes, your body does not make enough insulin or cannot use the insulin your body makes. Without insulin to move sugar into your cells for energy, sugar stays in your blood. This is called "high blood sugar."

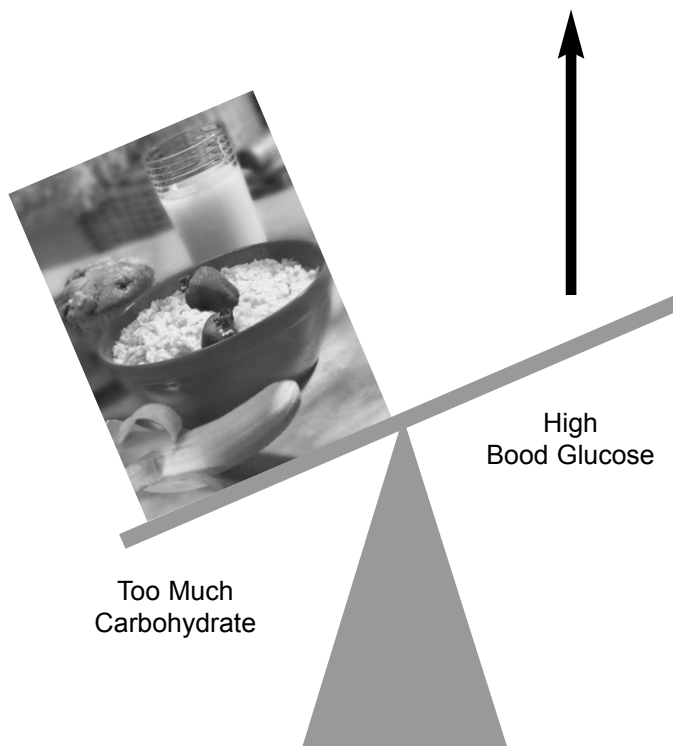
How long does it take for a food to change to sugar in the blood?

Carbohydrate food: most is changed to sugar within 1 1/2 hours after eating.

Protein food: half is changed to sugar within 3-4 hours after eating.

Fatty food: a small amount is changed to sugar within several hours after eating.

As you can see, carbohydrate foods make your blood sugar level go up the fastest. To control your blood sugar, keep track of the number of carbohydrate choices in your meals and snacks. Use your meal pattern that your health care provider or dietitian gave you to plan meals that give you a variety of foods.



Keep your blood sugar in a healthy range

To manage your disease,

- plan meals and snacks to include the number of carbohydrate choices in your meal pattern;
- eat meals and snacks at about the same time each day.

What is a carbohydrate choice?

One carbohydrate choice is a serving of food that contains about 15 grams of carbohydrate. Your food plan tells you how many choices you have for each meal. You decide which carbohydrate foods you want to eat.

To count carbohydrates, you need to know the amount of food that makes a serving, and the amount of carbohydrate in the food. If you eat double the serving size, you need to count two carbohydrate choices.



*1 small apple = 1 choice
(15 grams of carbohydrate)*



*2 small apples or 1 large apple
= 2 choices
(30 grams of carbohydrate)*

Example:

One carbohydrate choice (15 grams of carbohydrate) equals

- one serving of grains, beans or starchy vegetables, or
- one serving of milk, or
- three servings of non-starchy vegetable, or
- other carbohydrates in amount listed in the table on page 3.

Carbohydrate counting helps you keep track of how much carbohydrate you eat for meals and snacks. It's best to eat small amounts of carbohydrates at different times during the day, rather than a lot at one time. This helps control your blood sugar levels.

The Basics of Diabetes, International Diabetes Association

Carbohydrate counting:

Eating too much food at one time can raise blood sugar levels too high. This can be dangerous. Carbohydrate counting helps you keep track of how much carbohydrate you eat for meals and snacks. Skipping meals can cause blood sugar to drop too low. This will make you feel weak, tired and hungry, and you may eat too much at your next meal.

Stay healthy by controlling your blood sugar.

You may have high blood sugar and still feel fine. Or, you may not feel so well. You may feel tired and have no energy. You may urinate often and feel thirsty.

If your blood sugar level stays high, so does your risk of heart attack and stroke. High blood sugar can damage kidneys, nerves, blood vessels, nerves and eyes.

Healthy meals include foods that contain a balance of carbohydrate, protein, and fat. Carbohydrate affects blood sugar levels more than protein and fat. People with diabetes should carefully control the amount of carbohydrate they eat.



**Each item below is one carbohydrate choice
(15 grams of carbohydrate):**

Grains, beans and starchy vegetables

- 1 slice bread
- 1/2 small bagel or English muffin
- 1/2 hamburger or hot dog bun
- 1 6-inch tortilla
- 4–6 crackers (saltines)
- 1/2 cup cooked cereal
- 3/4 cup dry cereal
- 1/3 cup spaghetti, macaroni, or other pasta
- 1/3 cup cooked rice
- 1/3 cup cooked beans or peas
- 1/2 cup corn
- 1/2 cup lima beans
- 1/3 cup rice
- 1 small potato
- 1/2 cup sweet potato
- 1 cup winter squash
- 3 cups popped popcorn

Fruits

- 1 small fresh fruit
- 1/2 cup canned fruit in natural, unsweetened juice
- 1/4 cup raisins, prunes, other dried fruit
- 1/2 cup fruit juice

Milk

- 1 cup milk
- 1 cup plain yogurt
- 1/3 cup fruit-flavored, low-fat yogurt

Other carbohydrates

- 1/3 cup low-fat yogurt with fruit
 - 1/2 2-ounce Snickers® Bar
 - 1/2 Pop-Tart®
 - 1-inch-square frosted chocolate cake
 - 2 Oreo® cookies
 - 3/4 cake donut
 - 3 small ginger snaps
 - 5 small vanilla wafers
 - 1/2 cup ice cream
 - 1/18 fruit pie with 2 crusts
 - 1/16 of custard pie
 - 1/4 cup pudding
 - 1 tablespoon sugar, honey, maple syrup, corn syrup, jam or jelly
 - 1/2 granola bar
 - 1/2 cup spaghetti sauce
 - 1/4 cup fat-free salad dressing
 - 1/3 sweet roll
 - 12 potato chips
 - 1/2 cup chocolate milk
 - 5 jelly beans
 - 1/2 of 1 1/2-ounce Hershey's® Milk Chocolate bar
 - 2-inch-square brownie
 - 1/2 small cupcake, frosted
 - 1 1/2 fig bars
- Vegetables**
- 3 cups raw vegetables, such as salad greens
 - 1 1/2 cups cooked vegetables (spinach, broccoli, carrots, lettuce)
 - 1 1/2 cups tomato juice or vegetable juice

The *Diabetes, Carbohydrates and You* fact sheet series was developed by the UMaine Cooperative Extension Diabetes Education Committee, including

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