A Beginner’s Guide to Carbohydrate Counting

This slide show explains:

• What foods contain carbohydrates
• How much of these foods you can eat
• Where to look up the carb content of foods

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Prior to joining BD, Pia educated people with diabetes about medical nutrition therapy in a private physicians office, an outpatient clinic at a hospital and a nursing home where she counseled patients one-on-one and in group classes.
Many people believe that a diabetes meal plan means that you just have to cut back on sugar.

This is not true!

Carbohydrates (carbs) have the greatest effect on your blood sugar.

90 to 100 percent of the carbs you eat appear in your bloodstream as blood glucose within minutes to hours after you have eaten.

You may be asked to count the carbs that you eat.

The carbs you will need to count are both:

• starches that break down slowly into sugar
• simple sugars that break down into blood glucose almost right away
Starches include certain vegetables, all grains, and products made from grains

All of these foods contain starches:

<table>
<thead>
<tr>
<th>Starchy Vegetables</th>
<th>Legumes</th>
<th>Grains</th>
<th>Products made from grains, such as pasta, bread, rolls, bagels, crackers, cereals and baked goods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular and sweet potatoes, corn, fresh peas and lima beans</td>
<td>Dried beans and peas</td>
<td>Grains like wheat, oats, barley, and rice</td>
<td>Products made from grains, such as pasta, bread, rolls, bagels, crackers, cereals and baked goods</td>
</tr>
</tbody>
</table>
Sugars include the natural sugars in fruit and milk, plus certain sweeteners added to prepared foods and drinks.

All of these foods contain sugars:

- **Fruit and fruit juices**: Foods that contain fruit or fruit juices such as jams, jellies, and fruit smoothies.
- **Sweet bakery products**: Such as cake with icing, pie, donuts, candy, and cookies.
- **Sugary drinks**: Such as regular soda and fruit drinks.
- **Sweet condiments**: Such as barbeque sauce, relish and ketchup.
- **Milk and yogurt**.
Sugar goes by many names…

Some of the names for sugar that you may find in the ingredients include:
- table sugar
- brown sugar
- molasses
- honey
- beet sugar
- cane sugar
- confectioner’s sugar
- powdered sugar
- raw sugar
- turbinado
- maple syrup
- high-fructose corn syrup
- agave nectar
- sugar cane syrup
- fructose
- lactose
- sorbitol
- xylitol
- glycol
- glycerol
- glycerol
- mannnitol
- isomalt and other sugar alcohols
Being more aware of the carbohydrates you eat, or counting the carbs in your meals, can help you match your medication or activity levels to the food you eat. This can help you to better control your blood glucose.

One serving of carbohydrate is measured as 15 grams. A food that contains 15 grams of carbohydrate is called “one carb serving”.

For example, one slice of bread, a small piece of fruit, or a ear of corn each have around 15 grams of carb. Each of these equals one carb serving.
Here are examples of the carb amounts in specific foods:

<table>
<thead>
<tr>
<th>Food Description</th>
<th>Carbohydrate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 cup cooked pasta or 1 cup cooked rice</td>
<td>45g</td>
</tr>
<tr>
<td>Whole English muffin</td>
<td>30g</td>
</tr>
<tr>
<td>3 cups popped popcorn</td>
<td>15g</td>
</tr>
<tr>
<td>Medium potato</td>
<td>30g</td>
</tr>
<tr>
<td>1 cup corn or peas</td>
<td>30g</td>
</tr>
<tr>
<td>1½ cups veggies (green beans, broccoli, or carrots, cooked)</td>
<td>15g</td>
</tr>
<tr>
<td>Small fruit (apple, orange, nectarine)</td>
<td>15g</td>
</tr>
<tr>
<td>17 grapes, 12 cherries, ½ cup applesauce</td>
<td>15g</td>
</tr>
<tr>
<td>1 cup milk</td>
<td>12g</td>
</tr>
<tr>
<td>1 container (6oz.) yogurt, flavored, artificially sweetened</td>
<td>12g</td>
</tr>
<tr>
<td>½ cup vanilla ice cream</td>
<td>15g</td>
</tr>
<tr>
<td>½ cup sherbet</td>
<td>30g</td>
</tr>
<tr>
<td>2 small cookies</td>
<td>15g</td>
</tr>
</tbody>
</table>
All carbohydrates affect blood sugar in the same way.

It is the amount of carb you eat that is important, not the type of carb.

A serving of ice cream does not raise blood sugar higher than one equal carb serving of potatoes, rice, or pasta. This is true whether you have type 1 or type 2 diabetes.

For example: These three foods will all raise your blood sugar by the same amount:

- 1 cup of vanilla ice cream that has 30 grams of carbs
- A 2 oz. roll that has 30 grams of carbs
- 2/3 cup of spaghetti that has 30 grams of carbs

Same impact on blood sugar:

- 1 cup serving of 30 grams of carb
- 2 oz. roll of 30 grams of carb
- 2/3 cup of spaghetti of 30 grams of carb
“Sugar-free” and “no sugar added” foods may still contain a large amount of carbs.

Sugar-free apple pie has carbohydrates from the apples and the pie crust.

Sugar-free pudding has carbohydrates from the milk.

This sugar-free pudding contains 8 grams of carb per ½ cup serving:

```
Nutrition Facts

Serving Size: ½ cup • 11g
Amount Per Serving

Calories 80
Calories from Fat 0%

Total Fat 0g
- Saturated Fat 0g
- Trans Fat 0g

Cholesterol 0mg

Sodium 300mg

Total Carbohydrate 8g
- Dietary Fiber <1g
- Sugars 0g

Protein <1g

Vitamin A 4%

Calcium 15%

Unofficial Pts: 2

Percent of Calories from:
- Fat 0%
- Carb 40%
- Protein 0%

*Percent Daily Values (DV) are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

1g Fat = 9 calories
1g Carbohydrate = 4 calories
1g Protein = 4 calories
1g Alcohol = 7 calories
```
Basic Carb Counting Using Grams

Your meal plan may call for you to eat a specified amount of carbohydrate at each meal or snack.

You do not have to eat the same foods every day. Your food choices can change from day to day as long as the total carbs specified for each meal and snack stay about the same.

Being consistent is the key to successful carb counting.

For example, if you need to eat around 45 grams of carb for breakfast, here are two different breakfasts that each total around 45 grams of carb:

<table>
<thead>
<tr>
<th>Breakfast #1</th>
<th>Breakfast #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 slices of whole wheat toast</td>
<td>¾ cup of bran cereal</td>
</tr>
<tr>
<td>1 tablespoon jam</td>
<td>½ cup of milk</td>
</tr>
<tr>
<td>Egg substitute or egg whites</td>
<td>½ banana</td>
</tr>
<tr>
<td>Black coffee with sugar substitute</td>
<td>Black coffee with sugar substitute</td>
</tr>
<tr>
<td>Total grams of carbohydrate:</td>
<td>Total grams of carbohydrate:</td>
</tr>
<tr>
<td>45 grams</td>
<td>44 grams</td>
</tr>
</tbody>
</table>
Portion Sizes Matter, so Read Food Labels!

What you think of as a portion may actually count as several carb servings.

For example:
One carb serving of cooked pasta is 1/3 cup, which equals 15 grams of carb.

If you eat 1 cup of cooked pasta, your portion is actually 3 carb servings, totaling 45 grams of carb.
You will find the serving size and the grams of carbohydrate per serving on food labels:

### Nutrition Facts

<table>
<thead>
<tr>
<th>Serving Size: ½ cup ± 11g</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Amount Per Serving</strong></td>
</tr>
<tr>
<td>Calories: 90</td>
</tr>
<tr>
<td>Calories from Fat: 0%</td>
</tr>
<tr>
<td>Total Fat: 0g</td>
</tr>
<tr>
<td>Saturated Fat: 0g</td>
</tr>
<tr>
<td>Trans Fat: 0g</td>
</tr>
<tr>
<td>Cholesterol: 0mg</td>
</tr>
<tr>
<td>Sodium: 300mg</td>
</tr>
<tr>
<td>Total Carbohydrate: 8g</td>
</tr>
<tr>
<td>Dietary Fiber: &lt;1g</td>
</tr>
<tr>
<td>Sugars: 0g</td>
</tr>
<tr>
<td>Protein: &lt;1g</td>
</tr>
<tr>
<td>Vitamin A: 4%</td>
</tr>
<tr>
<td>Vitamin C: 0%</td>
</tr>
<tr>
<td>Calcium: 15%</td>
</tr>
<tr>
<td>Iron: 4%</td>
</tr>
<tr>
<td>Unofficial Pts: 2</td>
</tr>
</tbody>
</table>

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Percent of Calories from:
- Fat: 0%
- Carbohydrate: 40%
- Protein: 0%

*Percent Daily Values (DV) are based on a 2,000 calorie diet. Your daily intake may be higher or lower depending on your calorie needs.*

- 1g Fat: 9 calories
- 1g Carbohydrate: 4 calories
- 1g Protein: 4 calories
- 1g Alcohol: 7 calories
How many carbs should people with diabetes eat?

Everyone needs a different amount of carb.

The amount that is best for you depends on your age, height, weight, level of physical activity, current blood glucose level, and your blood glucose targets.

Your doctor or dietitian will give you specific carbohydrate targets for each meal and snack.

<table>
<thead>
<tr>
<th>Carb limits for Women</th>
<th>Carb limits for Men</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Carbs in a meal</strong></td>
<td><strong>Carbs in a meal</strong></td>
</tr>
<tr>
<td>30 to 60 grams</td>
<td>45 to 75 grams</td>
</tr>
<tr>
<td><strong>Carbs in snacks</strong></td>
<td><strong>Carbs in snacks</strong></td>
</tr>
<tr>
<td>15 to 30 grams</td>
<td>15 to 30 grams</td>
</tr>
</tbody>
</table>

If you are trying to lose weight, your doctor may ask you to use the lower number in these ranges for your carb counts by meal.
Follow these general eating tips:

- Try not to skip meals

- Eat regularly and space out your carbohydrates evenly throughout the day. This can help you to maintain better blood glucose control.

- Balance your meals: include a good source of carbohydrate, lean protein and/or a healthy fat in each meal.

- Include daily: 1½ cups of veggies, 2 to 3 servings of fruit, 1 to 3 cups of low fat milk or yogurt.

- Drink water! It can help you to feel full, so that you do not eat as much.
Where can you look up the carb content and serving sizes of foods?

The American Dietetic Association describes the grams of carbohydrate in a wide range of foods.

The page on their web site is called:
Food Nutrient Data for Choose Your Foods: Exchange Lists for Diabetes, 2007

The web address is:
http://www.eatright.org/cps/rde/xchg/ada/hs.xsl/nutrition_13961_ENU_HTML.htm

At the bottom of the page are lists you can download and print: