



## What is a carbohydrate?

Calories from food derive from three nutrients: protein, fat, and carbohydrate. Each nutrient affects glucose differently, but carbohydrate has the greatest impact. Within minutes of eating carbohydrate, sugars and

starches are broken down into glucose, and glucose levels start to rise. Insulin helps the body absorb the glucose and use it for energy. Below is a short list of common foods that contain carbohydrate:



Grains (ex: bread, cereal, rice, pasta)



Fruits and fruit juice  
(ex: orange, apple, grapefruit)



Starchy vegetables  
(ex: potatoes, corn, peas, beans)



Milk and other dairy products  
(ex: skim milk, yogurt, ice cream)



Non-starchy vegetables contain a small amount of carbohydrate



Desserts and other snacks  
(ex: cupcake, cookies, popcorn)

## What is carbohydrate counting?

Carbohydrate counting is a method of estimating the amount of carbohydrates in food. When combined with insulin pump therapy, carbohydrate counting offers more flexibility with food choices and meal timing by matching insulin more precisely with carbohydrate.



**TRAINING TIP:** The amount of carbohydrate needed varies from person to person. Speak with your healthcare provider for recommendations.

### Estimating Carbohydrates

It is easy to under- or overestimate the amount of carbohydrate you are eating. Countless resources are available to help you estimate carbohydrate in food. Some options are listed below:

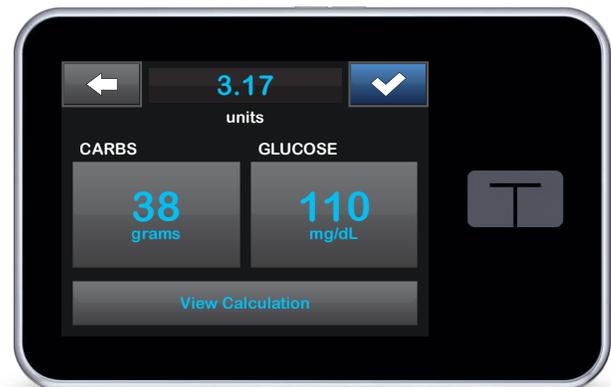
- Printed and online resources in the form of books, cookbooks, handouts, restaurant guides, etc.
- Software applications for your mobile device
- Nutrition Facts Labels (see reverse side)

### Weighing and Measuring Foods

Weighing and measuring the food you eat can help keep your carbohydrate counting accurate. Using measuring utensils helps “train the eye” to better estimate portions.

- Use a dry measuring cup for measuring solid foods. The food should be level with the top of the cup.

- Use a liquid measuring cup for measuring liquids. The liquid should be at level with the measurement line.
- Use a kitchen scale for food that will not easily fit into measuring cups, like whole fruit or bread.



The amount of carbohydrate entered into your pump will determine how much insulin will be calculated and delivered as a Food Bolus.

# Carbohydrate Reference Guide

Each food item in the guide below represents a 15-gram carbohydrate choice. These are not suggested portions, but an added resource for estimating carbohydrate.

15 Grams of Carbohydrate	
Fruit, Juice, Dairy	Portion
Apple, Orange, Peach, or Pear (small)	1
Banana (very small)	1
Berries (black, blue, or raspberry)	3/4 cup
Canned Fruit (unsweetened)	1/2 cup
Fruit Juice (orange, apple, grape, etc)	1/2 cup
Melon (cubed)	1 cup
Milk (skim, low fat, or whole)	1 cup
Strawberries (whole)	1 1/4 cup
Yogurt (plain or artificially sweetened)	2/3 cup

15 Grams of Carbohydrate	
Starches	Portion
Bagel (large)	1/4
Bread (white or whole wheat)	1 slice
Corn, Peas, or Beans (cooked)	1/2 cup
Grits or Unsweetened Oatmeal (cooked)	1/2 cup
Hamburger or Hot Dog Bun	1/2
Mashed Potatoes (plain white or sweet)	1/2 cup
Pancake or Waffle (4 inches)	1
Potato (large, baked)	1/4
Rice or Pasta (cooked)	1/3 cup
Tortilla (corn)	1
Tortilla (flour)	1/2

Note: Please refer to our Guide to Successful Pumping for a more complete list.

## Nutrition Facts Label

Regulated by the U.S. Food and Drug Administration, the Nutrition Facts Label is the most reliable and easy-to-use resource for estimating carbohydrate in foods.

### SERVING SIZE

The Serving Size is based on one serving. It is not a suggested serving, but a reference for all of the label information. The listed Serving Size may be different than the amount you are eating.

Nutrition Facts	
8 servings per container	
<b>Serving size</b>	<b>2/3 cup (55g)</b>
<b>Amount per serving</b>	
<b>Calories</b>	<b>230</b>
<b>% Daily Value*</b>	
<b>Total Fat</b> 8g	<b>10%</b>
Saturated Fat 1g	<b>5%</b>
Trans Fat 0g	
<b>Cholesterol</b> 0mg	<b>0%</b>
<b>Sodium</b> 160mg	<b>7%</b>
<b>Total Carbohydrate</b> 37g	<b>13%</b>
Dietary Fiber 4g	<b>14%</b>
Total Sugars 12g	
Includes 10g Added Sugars	<b>20%</b>
<b>Protein</b> 3g	
Vit. D 2mcg 10% • Calcium 260mg 20%	
Iron 8mg 45% • Potas. 235mg 6%	

### TOTAL CARBOHYDRATE

Keep your focus on Total Carbohydrate. This reflects all carbohydrate including sugars, starch, dietary fiber, sugar alcohol, and others.

In this example, two-thirds of a cup contains 37 grams of carbohydrate. Let's consider different serving sizes:

- 19 grams in one-third of a cup
- 14 grams in one-fourth of a cup



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