

## Helping Your Child Count Carbohydrates

The carbohydrate (carb) counting meal plan matches insulin to the food you eat. This makes it easier to choose the foods you want while keeping your blood sugar levels in control.

### What is a carbohydrate (carb)?

Carbs are the body's best source of energy because they are the easiest to use. Carbs, or glucose, is the only form of energy that the brain can use. It is not healthy to cut carbs out of your diet. It is best to choose healthy sources of carb.

### Where can I find healthy carbs?

The amount of carb that your body needs is based on your height, weight, and activity level. There are three types of carbs: sugar, starch, and fiber.

Sugars are the simplest form of carb and the easiest for the body to use. They are often called "quick carbs."

Starches are the largest form of carb and take the body longer to use.

Healthy sources of carbs are high in fiber. Try to choose grains that have at least 3 grams of fiber per serving.

Non-starchy vegetables like lettuces, tomatoes, broccoli, cauliflower and many others have small amounts of carb. They are also great sources of fiber.

### Sugars to Choose

- Whole fruit
- Vegetables
- Low-fat dairy, yogurt and cheese

### Sugars to Limit

- Fruit juice
- Fruit-flavored drinks
- Sports drinks
- Soda
- Chocolate milk
- Candy, desserts

### Starches to Choose

- Whole grains (100% whole wheat bread, brown rice, whole grain pasta, quinoa, buckwheat, etc.)
- Whole grain cereals (oatmeal, cold cereals with < 8 grams of sugar)
- Beans, lentils, and split peas
- Starchy vegetables (potatoes, peas, winter squash, and corn)

### Starches to Limit

- Refined grains (white bread/rice)
- Sweetened cereals with > 8g sugar
- Desserts (cakes, pies, cookies)

### How do carbs affect blood sugar levels?

Carbs increase blood sugar levels more than protein and fat. Almost all (90-100%) of carbs eaten affect the blood sugar within 20 minutes. Sugars affect the blood sugar faster than starches. Some starches take almost an hour to affect the blood sugar. On average, 1 gram of carb will raise blood sugar levels 3-4 mg/dl.

### How do protein and fat affect blood sugar levels?

Protein and fat eaten without carbs have little effect on blood sugar levels. When they are eaten with carbs, they can help the blood sugar to rise more slowly. Meals that are high in fat and protein, like pizza, may cause the blood sugar level to rise and stay high for 2-3 hours after eating.

### Where can I find lean protein?

- Fish
- Skinless chicken, turkey
- Dairy (milk, cheese, yogurt)
- Lean beef, bison and venison
- Lean pork
- Tofu and soy products
- Beans and split peas
- Nuts and seeds

### Where can I find healthy fat?

- Nuts and seeds
- Peanut butter and other nut butter
- Olive oil and olives
- Avocado
- Fish

### Step 1: Finding Carbs

The food label is a great place to get carb information. For homemade foods or foods without a label, use these tools to guess the amount of carb:

- Carb counting books/food lists
- Fast food and restaurant menu nutrition information
- Websites and smart phone apps

### Step 2: Reading a Food Label for Carb Content

The Nutrition Facts label will tell you how many and what type of carbs are in a food.

Look for the “Total Carbohydrate” line on the Nutrition Facts label. If there are additional carbohydrate sources noted on the label, the Total Carbohydrate gram amount already includes those other numbers. On this label shown, the Total Carbohydrate amount of 37 g includes the grams of fiber, total sugar, and added sugar.

Using the information on fiber and added sugars in foods can be helpful! Foods that are **lower** in total sugars and added sugars and **higher** in fiber are going to have a slower impact on your blood sugar.

<b>Nutrition Facts</b>	
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>
<i>Trans Fat</i> 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	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 240mg	6%
<small>* 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.</small>	

### Step 3: Practice Carb Counting

Practice carb counting by **keeping a food log for 1-2 weeks**. Use the “Food Record for Carb Counting” form at the end of the handout.

Keeping track will show you how foods affect your blood sugar.

- Are there carbs that affect your blood sugar more than others?
- How does exercise affect your blood sugar?
- How long do you go without eating in between meals?
- Is there a pattern of low or high blood sugars?

**Measure the food you eat.** Use measuring cups and spoons or a food scale to help you figure out the amount of food you eat. Write down the portion sizes in your food log. Measure your glasses and bowls so you know how much they will hold.

**Check your blood sugar** before you eat and 2 hours after the start of your meal. Write down these blood sugar levels in your Food Log.

**Using Your Insulin-to-Carbohydrate Ratio (ICR).** The ICR is used to figure out the number of units of insulin you will need to "cover" the carbs in your meal or snack. You will use \_\_\_\_\_ (insulin type here) for this.

Your ICR is \_\_\_\_\_ unit(s) for every \_\_\_\_\_ grams of carb you eat. ICR is often written like this \_\_\_\_\_: \_\_\_\_\_.

Add up the carb grams in food and drinks. Divide the total carb grams by your ICR to figure out the insulin units you need. Example: 60 grams of total carbohydrate divided by \_\_\_\_\_ = \_\_\_\_\_ units of (insulin type here).

If you are eating a meal, you may need to add units of correction insulin to the units of insulin for food. Consult your correction scale.

### Step 4: Fine Tuning

#### Consistency with Carbs

You need to feed your body energy (carbs) throughout the day. Eating carbs throughout the day helps to keep blood sugar levels stable. It also helps to keep you satisfied between meals.

#### Fiber in Meals

The amount of fiber in a food can affect your blood sugar because it is not 100% digested. This slows your rise in blood sugar. Foods that have 2-3 grams of fiber will not affect your blood sugar levels much.

#### Sugar Alcohols

Sugar alcohols like maltitol, mannitol, sorbitol, and xylitol are used in “sugar-free” foods. They have calories and can raise your blood sugar slightly, but not like real sugar does. Eating more than 10 grams of sugar alcohols can cause gas, bloating, and/or diarrhea.

#### Everyone Is Different

Your body will respond in its own way to food that you eat. That response may differ from someone else who has diabetes. Keep a food log with your blood sugars to find out which foods affect your blood sugar the most. Foods to watch out for are casseroles, fried foods, and high fat desserts.

#### Carbohydrate Counting References

*American Diabetes Association Complete Guide to Carb Counting: 4<sup>th</sup> Edition* by Hope Warsaw and Karmen Kulkami. 2019.

*The Diabetes Carbohydrate & Calorie Counter: 3<sup>rd</sup> Edition* by Annette B. Natow and Jo-Ann Heslin. 2006.

*The Ultimate Guide to Accurate Carbohydrate Counting* by Gary Scheiner, 2006.

*American Diabetes Association Guide to Healthy Restaurant Eating* by Hope S. Warshaw. 2009.

*The Calorie King Calorie, Fat, & Carbohydrate Counter 2011* by Allen Borushek. 2011.

### **Scales**

EatSmart Digital Nutritional Scale  
([www.amazon.com](http://www.amazon.com))

Nutri-Way Dietary Computer Scale  
([www.integrateddiabetes.com](http://www.integrateddiabetes.com))

Salter Digital Nutritional Scale (you can find at Williams-Sonoma)

### **Diabetes Nutrition Websites**

**CalorieKing.com** has a free food search function. It does require a subscription to use their food diary, goal setter, activity planner, charts and graphs. The Calorie King food search app for Apple devices is free, and you can download it from the App Store. If your phone or tablet uses Android, save the bookmark of the Calorie King website to the home screen of your device. See [www.calorieking.com](http://www.calorieking.com)

**MyFitnessPal.com** has free food search, meal tracking and recipe analysis. See <http://www.myfitnesspal.com/>.

[www.fitwatch.com](http://www.fitwatch.com)  
[www.fatsecret.com](http://www.fatsecret.com)

There are websites that offer food tracking tools and recipe builders. These are great tools if you would like to know the carbohydrate and nutrition facts for common foods, meals or favorite recipes. These same sites may also have free recipes to try, or to compare to your favorites. All these tools are free.

### **Who to Call**

If you are a UW Health patient and have more questions, please call UW Health at one of the phone numbers listed below. You can also visit our website at [www.uwhealth.org/nutrition](http://www.uwhealth.org/nutrition).

Nutrition clinics for UW Hospital and Clinics (UWHC) and American Family Children's Hospital (AFCH) can be reached at: **(608) 890-5500**.

Nutrition clinics for UW Medical Foundation (UWMF) can be reached at: **(608) 287-2770**.

Your health care team may have given you this information as part of your care. If so, please use it and call if you have any questions. If this information was not given to you as part of your care, please check with your doctor. This is not medical advice. This is not to be used for diagnosis or treatment of any medical condition. Because each person's health needs are different, you should talk with your doctor or others on your health care team when using this information. If you have an emergency, please call 911. Copyright 10/2023 University of Wisconsin Hospital and Clinics Authority. All rights reserved. Produced by the Clinical Nutrition Services Department and the Department of Nursing. HF#342

### Food Record for Carb Counting – Example

Food records can be a helpful way to learn how carbs and medicines affect blood sugars. This example includes a place to record your blood sugar (BG) before meals and two hours after meals. Foods and drinks, the amount, and the grams of carb can be recorded. Grams of carb for each meal should be added.

Time	BG	Foods/Drinks	Amount (e.g., cups, ounces)	Carb grams	Insulin taken	BG ~ 2 hours later	Time you tested after meal
7:14 AM	112	Whole wheat toast	2 slices	30g	Humalog 3units	156mg/dl	9:05AM
		Margarine	2 tsp	--			
		Poached eggs	2	--			
		Fresh strawberries	1 ½ cups	17g			
		Coffee (w/Splenda®)	2 cups	--			
		Skim milk (in coffee)	4 Tbsp	3g			
				Total=50g	Divide total by ratio to get units of insulin and then add for correction if needed.		
10:00 AM		Medium apple	1	25g			
		String cheese	1oz	1g			
				Total=76g	Let long-acting insulin cover snacks of 15-30 grams of carb.		

