

# level2

## Level2 Guide to Carb Counting: How Do You Count Carbs?

If you have type 2 diabetes, you might have been told that you should be tracking and counting the carbohydrates you eat. Often, people aren't even sure where to start — or what a carbohydrate even is. However, understanding carbs and learning how to count them is a crucial skill for people looking to reduce glucose in their bodies.

### Carbohydrates and Why They Matter

Carbohydrates are chains of sugar (mostly glucose). They are one of three types of [macronutrients](#). The others are proteins, which are made up of chains of amino acids; and fats, which are made of fatty acids.

Eating carbohydrates (glucose) tends to raise blood glucose. Proteins and fats do not, and they include essential amino acids and essential fatty acids that your body needs in order to function; if you don't eat enough, you will get sick.

People living with type 2 diabetes have too much glucose in the body and specifically, blood. As you can see in this [animation video](#), the excess glucose spills out from cells that are already filled with glucose and into the blood. However, if you reduce dietary carbohydrates, you can stop this from happening.

Carbohydrates are found in all kinds of foods. Types of carbohydrates include **starches**, **sugars** and **fiber**.

### Starches:

#### Starches include (but are not limited to):

Starchy vegetables: Regular potatoes, sweet potatoes, yams, corn, peas and lima beans.

Legumes: dried beans, peas and lentils.

Grains: wheat, oats, barley and rice.

Products made from grains: breads and pastas, crackers, cereals, English muffins, cupcakes, donuts, tortillas, naan, noodles, rice noodles, cereal.

### Sugar:

Sugars include the natural sugars found in fruit and dairy (such as milk and yogurt), plus added sweeteners in prepared foods and drinks. Examples include:

#### Table sugar

#### Syrup

- Fruit and fruit juices, as well as foods that contain fruit juices such as jams, jellies, and fruit smoothies.
- Sweets and bakery products such as cakes with icing, pie, donuts, cookies and candy.

Beverages with added sugars: regular sodas, fruit drinks, some sports drinks like Gatorade, lemonade or tea.

Condiments (sweetened with added sugars): barbecue sauce, ketchup, relish, salsa, teriyaki sauce, and salad dressings.

Dairy: milk, ice cream, coconut milk, pudding and yogurts.

Be extra careful of sugar because it can go by many names. Always read labels and nutrition facts on the back of store-bought foods.

Do not be fooled by products that claim to be **sugar-free, low sugar or no added sugars** on the external packaging or advertising. Look at the "*Ingredients*" list where added sugars can be found under alternate names such as:

Table sugar or sucrose, brown sugar, molasses, honey, lactose, fructose, sorbitol, xylitol, glycol, glycerol, mannitol, agave nectar, sugar cane syrup, turbinado, maple sugar, high-fructose corn syrup, powdered or confectioner's sugar, molasses, beet sugar.

Because sugar is so prevalent in the typical American diet, a person might eat 200-300 grams of carbohydrates a day. To contrast, a low carbohydrate diet contains less than 100 grams per day, and Ketogenic (or Very Low Carb - VLC) diets contain less than 40 grams per day.

## Food Guide for Lower Carb Meal Planning

The food lists below show the amount of carbohydrate within each food.

### Zero Carbohydrate Foods

The foods below contain 0 grams of carbohydrate per serving.

#### Meats

| Food | 1 Serving |
|------|-----------|
| Beef | 3 ounces  |
| Lamb | 3 ounces  |
| Pork | 3 ounces  |

#### Fish/Shellfish

| Food   | 1 Serving |
|--|-----------|
| Fish   | 3 ounces  |
| Salmon, canned or fresh                                    | 3 ounces  |
| Sardines   | 3 ounces  |
| Tuna, fresh or canned in oil or water                      | 3 ounces  |
| Shellfish: oysters, clams, scallops, shrimp, crab, lobster | 3 ounces  |

#### Poultry

| <b>Food</b> | <b>1 Serving</b> |
|-------------|------------------|
| Chicken     | 3 ounces         |
| Cornish hen | 3 ounces         |
| Duck        | 3 ounces         |
| Goose       | 3 ounces         |
| Turkey      | 3 ounces         |

### Fats

| <b>Food</b>   | <b>1 Serving</b> |
|---|------------------|
| Oils: canola, coconut, peanut, avocado, olive, etc. | 1 teaspoon       |
| Butter  | 1 teaspoon       |
| Mayonnaise, regular                                 | 1 tablespoon     |

### Eggs

| <b>Food</b> | <b>1 Serving</b> |
|-------------|------------------|
| Egg         | 1 egg            |
| Egg Whites  | 1 egg            |

## Very Low Carbohydrate Foods

Foods that contain less than 5 grams of carbohydrate per serving.

| <b>Food Item</b>         | <b>1 Serving</b>                                   | <b>Grams of Carbohydrate per Serving</b> |
|--------------------------|--|--|
| Almond milk, unsweetened | 1 cup  | 1  |
| Artichoke                | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5                                       |
| Arugula                  | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5                                       |
| Avocado                  | 2 Tbsp (1 oz)                                      | 2  |
| asparagus                | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5                                       |
| Bamboo shoots            | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5                                       |
| Bean sprouts             | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5                                       |
| Beets                    | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5                                       |
| Bok choy                 | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5                                       |
| Broccoli                 | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5                                       |
| Brussel sprouts          | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5                                       |
| Cabbage                  | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5                                       |
| Carrots                  | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5                                       |
| Cauliflower              | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5                                       |
| Celery                   | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5                                       |

|  |  |       |
|--|--|-------|
| Cheese                                   | 1 oz   | 0.5-1 |
| Collard greens                           | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5    |
| Cucumber                                 | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5    |
| Daikon                                   | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5    |
| Eggplant                                 | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5    |
| Green beans                              | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5    |
| Jicama                                   | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5    |
| Kale                                     | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5    |
| Kimchi                                   | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5    |
| Kohlrabi                                 | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5    |
| Leeks                                    | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5    |
| Lettuce                                  | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5    |
| Mushrooms                                | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5    |
| Okra                                     | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5    |
| Olives, black                            | 8 small/medium                                     | 1.5   |
| Olives, green                            | 10 large, 1.5 oz                                   | 1.5   |
| Onions                                   | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5    |
| Pea Pods, Pea Shoots                     | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5    |
| Peppers                                  | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5    |
| Pickle spears                            | 1  | 0.5-1 |
| Pumpkin, sesame, or sunflower seeds      | 1 Tbsp   | 2     |
| Radishes                                 | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5    |
| Romaine                                  | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5    |
| Rutabaga                                 | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5    |
| Seaweed                                  | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5    |
| Snow peas                                | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5    |
| Spinach                                  | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5    |
| Squash (yellow squash, spaghetti squash) | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5    |
| Tofu                                     | 3 oz   | 1-2   |
| Tomatoes                                 | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5    |
| Turnips                                  | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5    |
| Walnuts                                  | 1 oz   | 3     |
| Zucchini                                 | 1 cup <b>raw</b> vegetables or ½ cup <b>cooked</b> | <5    |

## Low Carbohydrate Foods

Foods that contain 5-10 grams of carbohydrate per serving.

| <b>Food Item</b>    | <b>1 Serving</b>    | <b>Grams of Carbohydrate per Serving</b> |
|---------------------|---------------------|--|
| Almonds, whole      | 1 oz (24-28 medium) | 5.5                                      |
| Beef jerky          | 1 oz                | 10                                       |
| Blackberries        | ½ cup               | 10                                       |
| Blueberries         | ½ cup               | 10                                       |
| Flaxseed            | 3 Tbsp, 1 oz        | 9  |
| Hummus              | 2 Tbsp              | 6  |
| Peanut butter       | 2 Tbsp              | 6  |
| Pistachios, shelled | ¼ cup, 1 oz         | 8.5                                      |
| Raspberries         | ½ cup               | 7  |
| Strawberries        | ½ cup (cut)         | 6  |

## Getting Started:

Carbohydrate counting can be complex can people to understand and implement. This guide can be used to promote a simplified way to think about food and learn about carb content.

### Non- Carb Foods:

#### **Carb Content: 0**

- Meats (beef, pork, lamb, bison, venison)
- Poultry (chicken, duck, turkey)
- Fish (bass, catfish, trout, tuna, salmon)
- Shellfish (crab, lobster, scallops, shrimp)
- Eggs
- Most Fats: extra virgin olive oil, coconut oil, avocado oil, ghee, (exceptions include avocados, olives, nuts and seeds)

### Zero Carb Beverages

#### **Carb Content: 0**

- Water
- Sparkling Water
- Black Coffee
- Tea
- Diet Soda

### Very Low Carb foods

**Carb Content:** less than 5 grams of carbs per servings size

- Leafy Veggies (arugula, kale, spinach, romaine, lettuce)
- Avocado
- Olives

- Non-starchy veggies (asparagus, celery, tomatoes, green beans)
  - **Examples:** asparagus, broccoli, cauliflower, eggplant, green beans, mushrooms, onions, pea pods, peppers, squash (summer, crookneck, zucchini), cabbage, celery, kohlrabi, radish, and tomatoes
- Cheese
- Tofu
- Dairy- half & half & heavy cream

## **Low Carb foods:**

### **Carb Content: 5-10 grams per serving**

- Nuts & Seeds (macadamia nuts, pecans, Brazil nuts, chia seeds, flaxseeds)
- Fresh Berries (blueberries, raspberries, blackberries, strawberries)
- Low Carbohydrate Wraps

## **Low Carb Treats**

### **Carb Content: less than 5 grams per serving**

- Sugar free Pudding,
- Sugar free gelatin

## **Low Carb Comfort Food Swaps**

### **Bread Alternatives**

- Low carbohydrate wraps (<5 grams of net carbs)
- “Cauliflower” pizza crust
- “Lettuce” wraps (Boston bib lettuce and romaine hearts)
- Cucumber or zucchini “sub sandwich”
- Stuffed bell peppers
- Tomatoes or Portobello Mushrooms as hamburger buns

### **Rice Alternatives:**

- Cauliflower or broccoli “rice” fresh or frozen

### **Pasta Alternatives**

- “Zoodles”- zucchini or squash noodles
- Eggplant “lasagna”

### **Potato Alternatives**

- Cauliflower mashed potatoes

### **Snack Alternatives:**

- Kale or Zucchini “chips”
- Seaweed Snacks

## **Zero carb Spices & Seasonings**

- Salt\*\*
- Black Pepper
- Most sugar-free Hot Sauces

- Mustard
- Oregano
- Rosemary
- Thyme
- Basil
- Chives
- Dill
- Chili Powder\*
- Curry Powder\*
- Cinnamon\*
- Garlic Powder\*
- Turmeric\*
- Onion Powder\*

\*Limit these spices to a teaspoon. They have a bit more trace net carbs than the other spices listed.

\*\*consider amount consumed if you have heart disease

## Carbohydrate Content

| Grams of Carbohydrates in Different Types of Foods   |                                  | [OBJ]         |
|--|----------------------------------|---------------|
|  | Serving size<br>(amount of food) | Grams of Carb |
| <b>Fruits</b>  |                                  |               |
| Apple  | 1 small, whole                   | 15            |
| Banana   | 1 large, whole                   | 31            |
| Strawberries   | 1 cup                            | 11            |
| Watermelon   | 1 cup                            | 11.5          |
| Grapes   | 17 small grapes                  | 15            |
| Pineapple  | 3/4 cup, diced                   | 15            |
| Tangerine  | 1 small, whole                   | 12            |
| <b>Starchy Vegetables</b>  |                                  |               |
| Corn   | 1/2 cup, cooked                  | 15            |
| Peas   | 1/2 cup, cooked                  | 15            |
| Potato   | 1 large, white<br>(baked)        | 63            |
| Mashed potatoes  | 1 cup                            | 30            |
| Baked beans  | 1 cup                            | 45            |
| <b>Non-Starchy Vegetables</b>  |                                  |               |
| **Asparagus, artichoke, Brussel sprouts, cauliflower, cabbage, carrots, broccoli, onions, spinach, peppers,    |                                  |               |
| snap peas, celery, cucumbers, salad greens, zucchini, summer squash, eggplant, greens (collard, kale, mustard) |                                  |               |
|  | **1 cup raw or 1/2<br>cup cooked | **5           |
| <b>Breads and Grains</b>   |                                  |               |
| Regular bread  | 1 individual slice               | 15            |
| Bagel  | 1 large, whole                   | 48            |
| Pita   | 1 large, whole                   | 33            |
| Flour tortilla   | 1 tortilla (6 in)                | 15            |
| Pasta  | 1 cup, cooked                    | 45            |
| Rice   | 1 cup, cooked                    | 45            |
| Quinoa   | 1 cup, cooked                    | 45            |
| Granola  | 1/4 cup                          | 15            |
| Grits or oatmeal   | 1 cup, cooked<br>(plain)         | 30            |



|                              |                                      |    |
|------------------------------|--------------------------------------|----|
|                              |                                      |    |
| <b>Crackers &amp; Snacks</b> |                                      |    |
| Popcorn                      | 3 cups                               | 15 |
| Crackers                     | 6 Ritz (round butter), or 6 saltines | 15 |
| Chips                        | 15 med tortilla                      | 15 |
| Rice Cake                    | 2 regular (plain)                    | 15 |
|                              |                                      |    |
| <b>Dairy Products</b>        |                                      |    |
| Milk, 2%                     | 1 cup                                | 11 |
| Yogurt, low fat              | 1 container (8 oz), plain            | 16 |
| Almond or soy milk           | 2 cups, plain                        | 15 |
| Pudding                      | 1/2 cup, chocolate                   | 28 |
|                              |                                      |    |
| <b>Sugary Drinks</b>         |                                      |    |
| Coca Cola                    | 1 can (12 oz)                        | 38 |
| Gatorade sports drink        | 1 bottle (20 oz)                     | 36 |
| Ginger ale                   | 1 can (12 oz)                        | 32 |
|                              |                                      |    |
| <b>Desserts</b>              |                                      |    |
| Ice cream                    | 1 cup                                | 32 |
| Chocolate chip cookies       | 2 cookies, medium                    | 18 |
| Apple pie                    | 1 slice (1/6, 8" pie)                | 40 |

## Select Foods with Confidence... Learn how to Read Food Labels

**#1: Start Here** - Many containers hold more than one serving. All values shown on the label represent a single serving. Take note of how many servings are available in the whole container.

### #3: Total Carbohydrates (in grams)

Carbohydrates are sugars and therefore greatly affect your blood sugar. Subtract the grams of fiber to calculate the net carbohydrates.

### #2: Added Sugars

Choose foods with as little added sugar as possible, ideally zero.

| <b>Nutrition Facts</b>       |                       |
|------------------------------|-----------------------|
| 14 servings per container    |                       |
| <b>Serving Size</b>          | <b>2 tbsp (32g)</b>   |
| Amount Per Serving           |                       |
| <b>Calories</b>              | <b>190</b>            |
|                              | <b>% Daily Value*</b> |
| Total Fat 12g                | 18%                   |
| Saturated Fat 2.5g           | 13%                   |
| Trans Fat 0g                 |                       |
| Cholesterol 0mg              | 0%                    |
| Sodium 110mg                 | 5%                    |
| <b>Total Carbohydrate 8g</b> | <b>3%</b>             |
| Dietary Fiber 3g             | 12%                   |

|  |           |  |
|--|-----------|--|
| Total Sugars   | 3g        |  |
| Incl 2g of Added Sugars  |           |  |
| <b>Protein</b>   | <b>7g</b> |  |
| Ingredients:<br>Peanuts, flaxseed, peanut oil, agave syrup,<br>palm fruit oil, salt. |           |  |

### Additional Resources:

- ADA Diabetes Food Hub - [https://www.diabetesfoodhub.org/diabetic-diabetes-low-carb-recipes.html?prev\\_scroll=949](https://www.diabetesfoodhub.org/diabetic-diabetes-low-carb-recipes.html?prev_scroll=949)
- Center for Disease Control (CDC) guide to Carb Counting  
<https://www.cdc.gov/diabetes/managing/eat-well/diabetes-and-carbohydrates.html>
- CDC guide to Carb Choices <https://www.cdc.gov/diabetes/managing/eat-well/diabetes-and-carbs/carbohydrate-choice-lists.html>