

# Carbohydrates and Diabetes

## Part of the *Learning to Live Well with Diabetes* Series

Welcome! A prediabetes or diabetes diagnosis can feel overwhelming. There is so much to learn and so much to do. The **Learning to Live Well with Diabetes** series was created to share clear, practical information and resources to offer support without adding extra stress. Setting small, manageable goals over time can help relieve stress and lead to lasting health improvements, and you don't have to do it alone. Please take what is helpful to you on your journey and leave the rest.

If you need help accessing or understanding this information, contact:

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### What are Carbohydrates?



Carbohydrates (carbs) are one of the body's main sources of energy, and they're found in foods like fruit, grains, beans, dairy and vegetables. When you eat carbs, your body breaks them down into glucose, which fuels your muscles and brain. For people learning to manage diabetes, paying attention to carbohydrates can be especially helpful because they have the most direct impact on blood sugar. That doesn't mean carbs are "bad"—they're an important part of a balanced eating pattern. The key is learning how different carb foods affect your blood sugar and choosing amounts and combinations that work best for you.

### How do I Get Started with Managing Carbohydrates?

To get started, it is helpful to become familiar with which foods contain carbs and choosing portions and meal combinations that support your health goals. As you learn more about the amount and type of carbs in different foods, you may feel more comfortable enjoying a wider variety of foods and adapting the amounts and types of carbs that you include throughout the day. You may also become more confident in planning meals and managing your blood sugar. The following pages offer more information on carbs as well as some examples for keeping track of the carbs that you eat without eliminating this important source of nutrition or missing out on your favorite foods.



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## Getting to Know Carbohydrates

Not all carbohydrates are the same. When managing diabetes, it helps to understand the traits of different carbohydrate foods because they affect blood sugar differently. It is important not to label different carbohydrates as “good” or “bad.” All carb foods belong in a balanced eating pattern—they each offer something valuable, whether it’s quick energy, important nutrients or the satisfaction of enjoying a favorite dish. The goal is simply to learn how different carbs work in your body so you can choose what fits best for your needs, preferences and routines.



**Carbohydrates are the body’s main fuel source.** They break down into glucose, which powers your brain, muscles and organs.



**Not all carbohydrate foods act the same in the body.** Their nutrients, fiber content and how they’re processed can influence how quickly they raise blood sugar.



**Whole grains are the most nutrient-rich grain choice.** They contain all three parts of the grain – the bran, germ and endosperm—which means they naturally provide fiber, vitamins, minerals and a steadier rise in blood glucose. Examples include oats, brown rice, quinoa and whole-wheat bread.



**Refined grains have been milled to remove the bran and germ.** This creates a softer texture and removes much of the fiber and many nutrients. White rice, white bread and many traditional pastas fall into this category.



**Enriched grains are refined grains that have had some nutrients added back.** This helps replace certain vitamins and minerals lost during processing, but the fiber is not restored, so they behave more like refined grains in the body.



**Fiber is a type of carbohydrate that the body cannot fully digest.** Because of this, it doesn’t raise blood sugar and can help slow digestion, supporting smoother blood glucose levels. Foods like beans, whole grains, nuts, vegetables and fruits are naturally rich in fiber.



**A balanced eating pattern includes a mix of carbohydrate foods.** Choosing more whole grains and fiber-rich options, along with lean proteins and healthy fats, can help keep blood sugar steadier and support overall health.

## A Note on Glycemic Index

The glycemic index (GI) is a tool that ranks carbohydrate foods based on how quickly they raise blood sugar. Foods with a high GI are digested faster and can cause a quicker spike, while foods with a low GI are digested more slowly and tend to produce a gentler rise. It's not a perfect system, but it can help you notice patterns—like how whole grains, beans and most fruits generally have a lower GI than high added sugar or highly processed foods. **For many people with diabetes, focusing on balanced meals, portion sizes, and fiber-rich foods is more practical than tracking GI numbers**, but knowing the basics can be a helpful addition to your toolkit.

## Incorporating Carbohydrates

One strategy for managing blood sugar is understanding how many carbohydrate servings you are eating at each meal or snack and keeping the number of servings within a range that meets your needs and minimizes blood sugar fluctuations. For most women with diabetes, that range is three to four servings (45-60 grams) of carbohydrate per meal is enough, and for most men, it's four to five servings (60-75 grams) per meal.

One serving of carbohydrate is around 15 grams. You can find the total number of grams of carbohydrate per serving on the nutrition facts label of most packaged foods. It helps to become familiar with the amount of carbohydrates in the food that you eat. This takes time and patience.

The nutrition facts label on the right is from a package of vanilla yogurt. Each  $\frac{3}{4}$  (0.75) cup has 20 grams of carbs- a little more than one (1) serving. Beneath the “Total Carbohydrate”, you can see that the yogurt has 0 grams of fiber and 11 grams of added sugar. This is all helpful information, and when you are managing blood sugar “Total Carbohydrate” is usually the overall most helpful piece of information on the label.

Nutrition Facts	
<del>about 5 servings per container</del>	
<b>Serving Size</b>	<b>0.75 cup</b>
<b>Amount per serving</b>	
<b>Calories</b>	<b>150</b>
<b>% Daily Value*</b>	
<b>Total Fat</b> 6g	<b>8%</b>
Saturated Fat 4g	<b>20%</b>
Trans Fat 0g	
<b>Cholesterol</b> 20mg	<b>7%</b>
<b>Sodium</b> 80mg	<b>3%</b>
<b>Total Carbohydrate</b> 20g	<b>7%</b>
Dietary Fiber 0g	<b>0%</b>
Total Sugars 17g	
Includes 11g Added Sugars	<b>22%</b>
<b>Protein</b> 5g	
Vitamin D 2mcg	<b>8%</b>
Calcium 200mg	<b>15%</b>
Iron 0mg	<b>0%</b>
Potassium 260mg	<b>6%</b>

\*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.

Here are some examples of foods that each contain about 15 grams (g) of carbohydrate:

Food Category	Food Example	Amount for 15 g Carbohydrate
Fruit	Apple, orange, peach (small)	1 small piece
	Banana	½ medium
	Grapes	17 small grapes (≈ ½ cup)
	Berries	1 cup
	Unsweetened applesauce	½ cup
Grains & Starches	Bread	1 slice
	Oatmeal (cooked)	½ cup
	Rice or pasta (cooked)	⅓ cup
	Quinoa (cooked)	½ cup
	Unsweetened cereal	¾ cup (varies)
Starchy Vegetables	Corn	½ cup
	Peas	½ cup
	Mashed potatoes	½ cup
	Baked potato	½ small potato (≈ 3 oz cooked)
Legumes	Cooked beans (black, kidney, pinto)	⅓ cup
	Baked beans	¼ cup
Dairy	Milk (cow's or unsweetened soy)	1 cup
	Plain yogurt	¾ cup (varies)
Snacks	Popcorn	3 cups plain
	Crackers	6 small
	Flour tortilla	1 small (6-inch)
	Granola bar	½ bar (varies—check label)

## Incorporating Carbohydrates- Examples

**Example 1**- Each of the following meals has about three (3) 15-gram servings of carbohydrates. The foods with carbohydrates are carrots, honey, mashed potatoes and whole-grain dinner roll. The example also shows a mix of carbohydrates with fiber (carrots and whole-grain dinner roll) and without fiber (honey and potatoes).

**The items on the menu can be rearranged to prioritize different carbohydrate choices.**

**Option 1** includes honey on the carrots. The carb servings are carrots (1), honey (1), and mashed potatoes (1).

3 slices of roast turkey  
1 cup of baby carrots roasted with honey  
½ cup of mashed potatoes  
2 cups of tossed salad with vinaigrette (no added sugar)

**Option 2** includes a larger serving of mashed potatoes. The carb servings are carrots (1) and mashed potatoes (2).

3 slices of roast turkey  
1 cup of baby carrots roasted without honey  
1 cup of mashed potatoes  
2 cups of tossed salad with vinaigrette (no added sugar)






**Option 3** includes a whole grain dinner roll. The carb servings are carrots (1), mashed potatoes (1), and dinner roll (1).

3 slices of roast turkey  
1 cup of baby carrots roasted without honey  
½ cup of mashed potatoes  
1 whole grain dinner roll with butter  
2 cups of tossed salad with vinaigrette (no added sugar)

**Example 2**- The following meal has about five (5) 15-gram servings of carbohydrates. The foods with carbohydrates are whole wheat bun, ketchup, potato chips, and baked beans. This example also shows a mix of carbohydrates with fiber (whole wheat bun and baked beans) and without fiber (ketchup and potato chips).

1 medium-sized hamburger on a whole wheat bun with mayo & ketchup  
1 cup of sugar free lemonade  
1 handful of potato chips  
½ cup baked beans

As shown in example 1, available foods can be rearranged to meet your desired carbohydrate range and your individual preferences. Example 2 includes some carbohydrate foods that are a little harder to understand. Let's break them down.

-  **Hamburger buns** vary widely in size. A standard grocery store bun has 26 grams of carbohydrate- a little less than two (2) carb servings
-  **Ketchup** has added sugar and has about five (5) grams of carbohydrate per serving- about one third (0.3) of a carb serving
-  **Lemonade** has carbs unless it is made with artificial sweetener. Sugar free lemonade is made with artificial sweetener and does not have carbs.
-  **Potato chips** can be hard to measure. One (1) handful of potato chips is roughly one (1) ounce and is about one (1) 15-gram serving of carbs.
-  **Baked beans** contain carbs from beans and carbs from added sugar, so unlike plain beans, which have one (1) 15-gram serving per one half (0.5) cup, baked beans have two (2) 15-gram servings per one half (0.5) cup.

### Let's put it together:

The hamburger bun has a little less than two (2) servings, and it has fiber, which helps it behave as though it has a bit less carb, and the ketchup has only a partial serving of carb.

- Together, the hamburger bun and ketchup have about two (2) carb servings.
- The potato chips have about one (1) carb serving.
- The baked beans have two (2) carb servings.

Professionals such as certified diabetes care and education specialists or registered dietitians can help understand servings.