

Tallahassee Memorial HealthCare Carbohydrate Counting for People with Diabetes

What is Carbohydrate Counting?

Carbohydrate counting is a method of meal planning to help manage blood glucose levels. Carbohydrates are our body's main source of fuel and are required for daily living. Carbohydrates are found in many foods including starches, fruits, vegetables, milk and sweets.

There are two meal planning methods that use carbohydrate counting:

1. Consistent Carbohydrate Meal Plan: This plan can be used by people who control their blood sugars with diet and exercise only, and those who take pills or insulin. The goal of a consistent carbohydrate meal plan is to eat about the same amount of carbohydrate at the same time each day. The amount of carbohydrate needed depends on many factors including your age, weight, and activity level. Your health care professional can help determine the right amount of carbohydrate for you. In general, most adult men should limit their carbohydrate intake to 45-60 grams or 3-4 carbohydrate choices per meal. Most adult women should limit their carbohydrate intake to 30-45 grams per meal or 2-3 carbohydrate choices. Snacks should be limited to 15-30 grams of carbohydrate.

2. Insulin to Carb Ratio: This plan works well for people who take an injection of rapid acting insulin with each meal they eat. The carb to insulin ratio varies from person to person. It depends on many factors including your age, weight, and activity level. It takes practice and effort to learn how to use an insulin to carb ratio. But, it allows more flexibility in the time, amount and what can be eaten. To use this plan, a person counts the total grams of carbohydrate in everything they are going to eat. The total amount of carbohydrate eaten is then divided by their insulin to carb ratio. This determines their rapid acting insulin dose for that meal. For example: if a person's insulin to carb ratio is 1 unit per 15 grams of carbs and they are going to eat 45 grams of carbohydrate they would do the following math:
Ex. 45 grams carb divided by 15 grams of carbohydrate per unit = 3 units of rapid acting insulin

Your health professional can help decide if a carbohydrate to insulin ratio is the right plan for you, teach you how to calculate your insulin doses and help determine what your carbohydrate to insulin ratio is.

How do you count carbohydrates?

There are many helpful tools that can be used to count carbohydrates. A few of them are listed here:

Counting Carbohydrate Choices:

A carbohydrate choice is the amount of food that equals 15 grams of total carbohydrate. Understanding carbohydrate choices can help you estimate your carbohydrate intake for foods that do not have a nutrition label.

The following foods are examples of 1 carbohydrate choice (= 15 grams of carb):

1/3 cup of rice or pasta (cooked)

1/2 cup of starchy vegetables such as corn, potatoes, peas or beans

1 slice of bread (1 ounce)

1 small piece of fruit like an apple or orange

1/2 banana

15 grapes

1 cup of berries or melon

1/2 cup of fruit juice

1 cup of milk

6 oz of light yogurt

1/2 of a hamburger bun

1/2 cup mixed dish, casserole, pasta salad, or potato salad

6 saltine crackers

9-13 snack chips, corn or potato

1/2 cup of ice cream

Estimating Portion Sizes

To correctly estimate your carbohydrate intake you need to know how much you are eating. Use these guidelines when aren't able to measure your food using measuring cups.

1 Cup= a serving about the size of a tennis ball or about the amount that can be held in both hands cupped together.

1/2 Cup= the amount of food that can be held in one hand.

3 oz= a piece of meat about the size of the palm of a woman's hand.

1 Tablespoon= a portion about the size of the tip of your thumb.

Reading Food labels

Food Labels are the best source of carbohydrate information for packaged foods. The example below shows you how to find the serving size and total carbohydrate in a packaged food. Remember, if you are having more than the portion listed as the serving size you will be getting more carbohydrate than is listed on the label.

Amount Per Serving		Calories from Fat 120
Calories 260		
% Daily Value*		
Total Fat 13g		20%
Saturated Fat 5g		25%
Trans Fat 2g		
Cholesterol 30mg		10%
Sodium 680mg		28%
Total Carbohydrate 31g		10%
Dietary Fiber 0g		0%
Sugars 5g		
Protein 5g		
Vitamin A 4%	•	Vitamin C 2%
Calcium 15%	•	Iron 4%

* Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

Carbohydrate Reference Lists:

The following list contains different foods and the amount of carbohydrates they contain. For balanced nutrition, it is a good idea to select your choices from a variety of different categories, like starches, milk/yogurt, and fruit.

Starches:	Amount	Carbs (g)
Bagel	1 Bagel 4”	60
Biscuit	1 Biscuit 2 ½” from refrigerated dough	15
Breads: average all types white, wheat etc	1 Slice, 1 oz	15
Cereals:		
Apple Jacks	1 Cup	27
Bran Flakes	1 Cup	22
Bran Flakes (w/ raisins)	1 Cup	46
Cheerios	1 Cup	22
Corn Flakes	1 Cup	24
Corn Pops	1 Cup	28
Froot Loops	1 Cup	26
Frosted Corn Flakes	1 Cup	34
Frosted Mini Wheats	1 Cup	45

	Granola	1 Cup	65
	Lucky Charms	1 Cup	29
	Shredded Wheat	1 Cup	21
	Trix	1 Cup	27
	Crackers:		
	Animal Crackers	8 Crackers	15
	Graham Crackers	3 squares	15
	Saltines	6 crackers	12
	Doughnut: glazed	1 Doughnut	30
	Cornbread	2x2 square	20
	English muffin	1 English Muffin	26
	Pancakes: 4" from mix or frozen	1 pancake	15
	Pasta: All kinds cooked	1 Cup	40
	Popcorn	3 Cups	15
	Pretzel bitesize twists	1 oz -23 pieces	20
	Pretzel- soft	1 Large	60-75
	Rice: average all types cooked	1 Cup	45
	Rolls:		
	Dinner	1 Roll	14
	Hamburger/Hot Dog	1 Bun	22
	Waffles: frozen average all types	1 waffle	15 grams
<i>Vegetables: Starchy</i>			
	Beans:		
	Lima	1 Cup	39
	Red Kidney	1 Cup	40
	Corn on the Cob	1 Ear	19
	Corn	1 Cup	30
	Lentils	1 Cup	40
	Peas Cooked	1 Cup	22
	Potatoes:		
	Baked	1 Large	60
	French Fried	20 Fries	31
	Mashed (w/ milk)	½ cup	18
	Sweet Potatoes:		
	Baked	1 small	28
	Candied	½ cup	30
	Winter, Squash Mashed	1 Cup	21
<i>Vegetables: Non-Starchy</i>			
	Asparagus:	1 Cup	8
	Beets:	1 Cup Cooked	17
	Broccoli:	1 Cup	8
	Cauliflower: cooked	1 Cup	5

Celery: Raw/Stalk	1 Stalk	3
Collards:	1 Cup	8
Carrots:		
Cooked	1 Cup	16
Raw	1 Medium Carrot	7
Boiled	1 Cup	7
Raw	1 Cup	4
Mushrooms:	1 Cup	8
Mustard Greens:	1 Cup	3
Okra:	½ Cup	6
Onions:		
Cooked	½ Cup	11
Raw	½ Cup	7
Green Peppers	¼ cup	7
Radishes:	1 Radish	0
Sauerkraut:	1 Cup	10
Soybeans:	1 Cup	17
Spinach: raw	1 Cup	1
Summer Squash	1 Cup Cooked	7
Tomatoes:		
Canned	1 Cup	7
Raw	1 Cup	7
Tomato Juice:	1 Cup	10
Turnips:	1 Cup	8
Turnip Greens:	1 Cup	6
Fruits:		
Apple:	1 Medium Sized	21
Applesauce: Unsw	½ Cup	15
Apricots:	1 Medium Sized	5
Avocado:	1 Medium Sized	12
Banana:	1 Medium Sized	27
Berries: Average all kinds	1 Cup	15
Cherries: (fresh)	15	15
Dates: (pitted or dried)	5	31
Figs:	1	10
Grapefruit:	½ Medium Sized	10
Grapes:	15	15
Orange:	1 Medium Sized	15
Peach:	1 Medium Sized	10
Pear:	1 Medium Sized	25
Pineapple:	½ cup	12
Plum:	1 Medium Sized	9
Prunes: (dried)	4	21
Raisins:	2 Tablespoons	15
Tangerine:	1 Medium Sized	9
Melon Average All Kinds	1 Cup	15

	Fruit Juice: average all kinds	½ Cup	15
Dairy Products:			
	Butter or Margarine:	1 Tablespoon	0
	Cheese: Average all kinds	1 oz	0
	Cottage (2%)	½ Cup	4
	Cream	1 oz	1
	Sour	1 Tablespoon	0
	Ice Cream	1 Cup	30
	Milk: Whole, 1%, 2% and Fat Free	1 cup	12
	Buttermilk	1 Cup	12
	Chocolate: (2%)	1 Cup	26
Yogurt:			
	Plain	8 oz	18
	Fruit flavored w/ sugar	8 oz	41
	“Light” flavored yogurt with artificial sweetener- average	8 oz	20
Meat & Poultry:			
	Bacon:	1 slice	0
	Beef: No breading all kinds	3 oz	0
Chicken:			
	Fried/Breast/Battered	3 oz	8
	Roasted	3 oz	0
	Eggs	1	1
	Ham:	3 oz	0
	Pork all cuts	3 oz	0
	Turkey	3 oz	0
Seafood:			
	Clams: (raw)	3 oz	2
Crabmeat:			
	Canned	3 oz	0
	Fish Sticks:	4	27
	Fresh Fish baked, broiled, or grilled without breading	3 oz	0
	Oysters: (raw)	3 oz	4
Salmon:			
	Canned (w/ bone)	3 oz	0
	Canned	3 oz	0

	Scallops:	3 oz	3
	Shrimp:	3 oz	1
	Canned Tuna	3 oz	0
<i>Beverages:</i>			
	Alcoholic:		
	Beer	12 oz	13
	Beer (light)	12 oz	5
	Wine	4 oz	2
	Carbonated Drinks:		
	Diet Soft Drink	12 oz	0
	Colas (non-diet)	12 oz	39
	Fruit Flavored Soft Drink:	12 oz	49
	Ginger Ale:	12 oz	32
	Root Beer:	12 oz	42
<i>Combination Foods:</i>			
	Beef:		
	Potpie	7 oz	38
	Stew	1 Cup	17
	Chicken Potpie:	1 serving	42
	Chile con Carne: (w/beans)	1 Cup	30
	Franks & Beans:	1 Cup	40
	Macaroni & Cheese:	1 Cup	40
	Pizza: hand tossed or pan pizza	1 Slice (1/8 of medium)	32
	Pizza thin crust	1 Slice 1/8 of medium)	18
	Spaghetti (w/ meat sauce):	1 Cup	40
<i>Combination Foods continued:</i>			
	Taco: soft shell	1	21
	Taco: hard shell	1	8
	Soups (canned w/ water):		
	Bean, Bacon	1 Cup	23
	Beef with Vegetables	1 Cup	10
	Chicken Noodle	1 Cup	9
	Clam Chowder (Manhattan)	1 Cup	12
	Consommé, Beef	1 Cup	4
	Consommé, Chicken	1 Cup	1
	Cream of Chicken	1 Cup	9
	Cream of Mushroom	1 Cup	9
	Minestrone	1 Cup	11
	Split Pea	1 Cup	25
	Soups (dry, water added):		
	Chicken Noodle	1 Cup	9
	Onion	1 Cup	5
	Tomato	1 Cup	19
	Soups (canned w/ milk):		
	Clam Chowder (NE)	1 Cup	17
	Tomato	1 Cup	22

	Oyster Stew	1 Cup	11
<i>Desserts & Sweets:</i>			
	Cake:		
	Angel Food	1/12 of cake	29
	Two layer cake with frosting: average all types	1/12 of cake	45-55
	Cheesecake	1/12	32
	Fruitcake	1½ oz	27
	Gingerbread	3 inch square	40
	Pound	1/16 of loaf cake	25
	Candy:		
	Milk chocolate	1.55 ounce bar	25
	Chocolate average all brands	1 fun size or snack size bar about 0.6 ounce	10-15
	Dark chocolate	1.45 ounce bar	24
	Hard candy: average	1 piece	5
	Chocolate Syrup	1 Tbsp	12
	Cookies:		
	Brownie no frosting	1 2"x2" square	15
	Butter	3-2" cookies	12
	Chocolate Chip	1 medium size	18
	Fig Bars	1	11
	Cupcake w/ frosting	1	35
	Frosting average all kinds	1 Tablespoon	15
	Gelatin:		
<i>Desserts & Sweets continued:</i>			
	Regular	1 Cup	40
	Sugar-free	1 Cup	2
	Honey:	1 Tbsp	17
	Jams and Preserves:	1 Tbsp	13
	Jellies:	1 Tbsp	14
	Marshmallows:	1 large	5
	Molasses:	1 Tbsp	14
	Pie, homemade:		
	Apple	1/8 pie	58
	Blueberry	1/8 pie	50
	Cherry	1/8 Pie	70
	Custard	1/8 pie	34
	Lemon Meringue	1/8 pie	50
	Pecan	1/8 pie	64
	Pumpkin	1/8 pie	41
	Popsicle:	2 oz	11
	Pudding sugar free	½ cup	15
	Pudding regular	½ Cup	28
	Sherbet:	1 Cup	55
	Sugar, white:	1 Tbsp	13

	Syrup:		
	Corn, dark	1 Tbsp	15
	Maple	1 Tbsp	13
	<i>Miscellaneous:</i>		
	Barbeque Sauce:	1 Tbsp	2
	Catsup (tomato):	1 Tbsp	4
	Coconut (fresh shredded):	1 Cup	12
	Dressings:		
	Blue Cheese	1 Tbsp	1
	Italian, Low-cal	1 Tbsp	2
	Mayonnaise:	1 Tbsp	0
	Mustard:	1 tsp	0
	Nuts: Average All Kinds	¼ Cup	6
	Olives:		
	Green	4	0
	Black	4	1
	Peanut Butter:	1 Tbsp	3
	Pickles:		
	Dill	1 Slice	0
	Relish	1 Tbsp	5
	Sweet Gherkins	1	5