

# Carbohydrate Counting

Carbohydrate, protein, and fat from food give you calories. In addition, carbohydrate raises your blood sugar.

*Carbohydrate counting* is a way you can be flexible when meal planning. Careful carbohydrate counting helps you and your diabetes team to match your insulin to the amount of carbohydrate you need.

Your dietitian can help you find the amount of carbohydrate that's right for your health and lifestyle.

## To count carbohydrate:

### Find the carbohydrate content of the food you eat

Check the Nutrition Facts table on packaged food. Look at the serving size and look for carbohydrate and fibre on the table.

#### Bran flakes

Find the **serving size**.  
If you eat more or less than this, adjust the nutrient amounts.

Find the grams of **carbohydrate** in one serving.

Find the grams of **fibre** in one serving.

Nutrition Facts	
1 cup (250 mL) (34 g)	
Amount	% Daily Value
<b>Calories</b> 120	
<b>Fat</b> 1 g	2 %
Saturated 0 g	0 %
+ Trans 0 g	
<b>Cholesterol</b> 0 mg	
<b>Sodium</b> 210 mg	9 %
<b>Carbohydrate</b> 28 g	9 %
Fibre 5 g	20 %
Sugars 5 g	
Sugar alcohols 0 g	
Starch 18 g	
<b>Protein</b> 4 g	
Vitamin A	0 %
Vitamin C	0 %
Calcium	0 %
Iron	30 %

## Find the available carbohydrate

Carbohydrates include sugar, starch, and fibre. Sugar and starch are *available carbohydrates* because they raise your blood sugar. Fibre doesn't raise your blood sugar.

To figure out the available carbohydrate in a serving of food, subtract the grams of fibre from the grams of carbohydrate.

$$\text{Grams of carbohydrate} - \text{Grams of fibre} = \text{Grams of available carbohydrate}$$

**Example:** Bran flakes in the Nutrition Facts table

**Carbohydrate:** 28 grams

**Fibre:** 5 grams

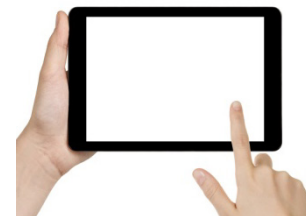
**Available carbohydrate:**  
28 grams – 5 grams = 23 grams

**Sugar alcohols:** If the Nutrition Facts table lists sugar alcohols, subtract the sugar alcohols *and* fibre from the carbohydrate.

Some of the most common sugar alcohols are xylitol, sorbitol, mannitol, maltitol, and glycerol.

## When there's no Nutrition Facts table:

- You can use the food lists in this handout.
- If you can't find the food in this handout, use a phone or tablet app or online nutrition counter. You will need to calculate the *available carbohydrate* for foods in these apps or online counters (see above).



- Figure out how much carbohydrate is in your recipes using an online tool like eaTracker.ca.
- Some cookbooks include carbohydrate and fibre amounts for each serving in the recipes.

## Weigh or measure

Weighing or measuring your food is important for carbohydrate counting.

Weigh or measure foods **after cooking** unless it's a food you usually eat without cooking.

### Food scales

Weighing food allows you to be more exact with carbohydrate counting. When possible, measure your food by weighing it.

Choose a scale that:

- is digital
- weighs in 1 gram at a time
- has a tare or zero button



Some digital scales tell you how much carbohydrate and other nutrients are in your serving of food. You will still need to figure out the available carbohydrate in your serving.

You can buy food scales at drug stores, department stores, and hardware stores.

### Measuring cups

Use measuring cups for foods that have a volume as a serving size in the Nutrition Facts table. *Volume* means cups or millilitres (mL).

To measure liquids, use liquid measuring cups.



To measure solid foods, use a food scale whenever you can. If you don't have a food scale, use dry measuring cups.

**Dry weight and cooked weight:** For pasta, rice, and grains (like oats, barley, and quinoa), the serving size on the Nutrition Facts table is usually the dry uncooked weight, not the cooked weight. Measure these foods after they're cooked, and use the information in the food lists on the next pages.

## Carbohydrate factors

A *carbohydrate factor* is the amount of available carbohydrate in 1 gram of food. When you know the carbohydrate factor for a food, you can figure out exactly how much available carbohydrate is in a weighed serving of that food. The food lists on pages 3–6 have the carbohydrate factors figured out.

**To figure out carbohydrate factors for food not listed in this handout:**

- a. Count the available carbohydrate in 1 serving of the food.
- b. Divide the available carbohydrate by the weight of that serving.

$$\begin{aligned} &\text{Grams of available carbohydrate in 1 serving} \\ &\div \text{Grams of food in that serving} \\ &= \text{Carbohydrate factor} \end{aligned}$$

**Example:** Bran flakes on page 1

**Available carbohydrate:** 23 grams

**Serving size:** 34 grams

**Carbohydrate factor:**

$$\begin{aligned} &23 \text{ grams} \div 34 \text{ grams} \\ &= 0.68 \text{ carbohydrate factor} \end{aligned}$$



### Use the carbohydrate factor

Using the carbohydrate factor, you can figure out the available carbohydrate in your serving of food.

$$\begin{aligned} &\text{Carbohydrate factor for the food} \\ &\times \text{Weight of your serving (grams)} \\ &= \text{Available carbohydrate in your serving} \end{aligned}$$

**Example:** Bran flakes

**Carbohydrate factor:** 0.68

**Weight of your serving:** 34 grams

**Available carbohydrate in this serving:**

$$0.68 \times 34 \text{ grams} = 23 \text{ grams}$$

## Carbohydrate food lists

- For foods with no Nutrition Facts table, use the lists below to find out how much available carbohydrate is in the servings you eat.
- The carbohydrate factor for the food x the weight of your serving = the grams of available carbohydrate in your serving.

Grains and Starchy Vegetables	Carbohydrate factor	One serving	
		Volume	Available carbohydrate
<b>Grains</b>			
bagel	0.48	¼ bagel (4½ in/11 cm)	13 g
bannock	0.49	1½ x 2½ in (4 x 6 cm)	18 g
barley, cooked	0.26	½ cup (125 mL)	21 g
bread, white	0.48	1 slice	17 g
bread, whole wheat	0.34	1 slice	12 g
bun, whole wheat	0.44	1	12 g
bun, hamburger, hotdog, or dinner	0.47	½	10 g
couscous	0.22	½ cup (125 mL)	19 g
naan bread	0.55	⅙ large (10 inches)	15 g
oatmeal, quick, cooked	0.12	¾ cup (175 mL)	21 g
pancake, plain, homemade	0.27	4½ in (11 cm)	11 g
pasta, white, cooked	0.29	½ cup (125 mL)	22 g
pasta, whole wheat, cooked	0.24	½ cup (125 mL)	18 g
pita bread, white	0.54	½ (6 in/15 cm)	15 g
pita bread, whole wheat	0.48	½ (6 in/15 cm)	13 g
quinoa, cooked	0.19	½ cup (125 mL)	14 g
rice, brown, long-grain, cooked	0.21	⅓ cup (75 mL)	14 g
rice, white, long-grain, cooked	0.28	⅓ cup (75 mL)	16 g
rice cakes, brown, plain	0.77	2 cakes	14 g
rice noodles, cooked	0.24	⅓ cup (75 mL)	15 g
roti/chapati	0.41	1 piece	18 g
rye crackers, wafers	0.58	3 crackers	19 g
soda crackers	0.71	7 crackers	15 g
tortilla	0.52	½ (10 in/25 cm)	19 g
waffle, homemade	0.31	1 medium	13 g
<b>Starchy vegetables</b>			
beans, lentils (dried, cooked, or canned)	0.16	½ cup (125 mL)	17 g
chickpeas (dried, cooked, or canned)	0.23	½ cup (125 mL)	20 g
corn, frozen or canned	0.17	½ cup (125 mL)	15 g
corn, on the cob, with cob	0.10	one piece (3½ in/9 cm)	10 g
parsnips, cooked	0.14	1 cup (250 mL)	23 g
plantain, cooked, mashed	0.29	⅓ cup (75 mL)	20 g
potato, baked with or without skin	0.19	½ medium	15 g
potato, boiled	0.19	½ medium	16 g
potato, French fried	0.34	10 strips	17 g
potato, mashed	0.16	½ cup (125 mL)	17 g
sweet potato, baked in skin	0.17	½ medium	10 g
sweet potato, mashed	0.15	⅓ cup (75 mL)	18 g
yam, baked or boiled, cubed	0.24	½ cup (125 mL)	17 g

Fruit	Carbohydrate factor	One serving	
		Volume	Available carbohydrate
apple, whole	0.12	1 small 1 medium	13 g 17 g
applesauce, unsweetened	0.10	½ cup (125 mL)	12 g
apricot, raw	0.09	4	13 g
banana, with peel	0.14	1 small ½ large	21 g 15 g
blackberries	0.04	2 cups (500 mL)	13 g
blueberries	0.12	1 cup (250 mL)	18 g
cherries, with pits	0.14	15 1 cup (250 mL) with pits	14 g 16 g
grapefruit, with peel	0.03	1 small or 1 cup (250 mL)	14 g
grapes	0.16	½ cup (125 mL) or 15	13 g
kiwi with skin	0.10	2 medium	18 g
mandarin oranges (tangerines) with peel	0.08	2 medium	20 g
mango, flesh only	0.15	½ medium ½ cup (125 mL)	16 g 13 g
melon, honeydew, no rind	0.08	1 cup (250 mL)	13 g
melon, watermelon, and cantaloupe, no rind	0.07	1 cup (250 mL)	11 g
nectarine, whole	0.09	1 large or 1 cup (250 mL)	12 g
orange, with peel	0.07	1 medium sections, 1 cup (250 mL)	13 g 18 g
papaya, flesh only	0.08	cubed, 1 cup (250 mL)	12 g
peach, whole	0.08	1 large, 1 cup (250 mL)	14 g
pear, whole	0.12	1 medium or 1 cup (250 mL)	20 g
pineapple, peeled	0.12	1 cup (250 mL)	19 g
plum, whole	0.10	2 medium	13 g
pomegranate, seeds	0.15	½ medium	12 g
raspberries	0.05	2 cups (500 mL)	13 g
Saskatoon berries	0.15	¾ cup (175 mL)	15 g
strawberries	0.05	2 cups (500 mL)	16 g
<b>Fruit juice</b>			
apple, orange	0.11	½ cup (125 mL)	14 g
grape, cranberry cocktail	0.14	½ cup (125 mL)	18 g
<b>Fruit, dried</b>			
apricot	0.55	8 halves	15 g
cranberries, sweetened	0.77	3 Tbsp (45 mL)	18 g
dates	0.67	3 medium	17 g
fruit leather	0.75	1 bar	11 g
raisins	0.76	2 Tbsp (30 mL)	14 g

If the package of the food you eat has a Nutrition Facts table, use the carbohydrate information from the package, instead of the information in the tables below. The Nutrition Facts table has more exact carbohydrate information for that food.

Milk & Alternatives	Carbohydrate factor	One Serving	
		Volume	Available carbohydrate
milk: skim, 1%, 2%, 3.25% (homogenized)	0.05	1 cup (250 mL)	12 g
milk, chocolate	0.11	½ cup (125 mL)	14 g
milk pudding	0.20	¼ cup (60 mL)	14 g
soy beverage, fortified, chocolate	0.10	½ cup (125 mL)	12 g
soy beverage, fortified, plain	0.06	1 cup (250 mL)	15 g
yogurt, flavoured	0.17	⅓ cup (75 mL)	15g
yogurt, plain or sugar-free	0.07	¾ cup (175 mL)	13 g

Other Foods Other foods are higher in calories, and are often higher in sugar, fat, or salt.	Carbohydrate factor	One serving	
		Volume	Available carbohydrate
barbeque sauce	0.36	1 Tbsp (15 mL)	6 g
brownie, no icing	0.58	2 x 2 inch (5x5 cm)	16 g
cake, round, no icing	0.54	1/10 single layer (8 in/20 cm)	23 g
cake, round, with icing	0.59	1/10 single layer (8 in/20 cm)	39 g
candies, hard	0.98	5 small	15 g
candies, jellybeans	0.93	5 large	14 g
candies, licorice	0.80	2 pieces	20 g
chips, potato, plain	0.46	10 chips	9 g
chips, tortilla	0.60	10 chips	11 g
cookies, chocolate chip, store-bought	0.65	2 (30 g total)	20 g
cookies, homemade	Varies	1 (30 g)	18 g
cranberry sauce, sweetened	0.38	2 Tbsp (30 mL)	12 g
fruit spread, no sugar added	0.51	1 Tbsp (15 mL)	7 g
granola bar, oatmeal	0.65	1 bar	18 g
ice cream	Varies	½ cup (125 mL)	15–20 g
honey	0.82	1 Tbsp (15 mL)	17 g
jam, jelly, marmalade	Varies	1 Tbsp (15 mL)	12–17 g
ketchup	0.23	1 Tbsp (15 mL)	4 g
muffin, plain, homemade	0.39	1 small	18 g
pickle, sweet	0.20	2 small	6 g
popcorn	0.63	3 cups (750 mL)	16 g
pretzels	0.77	7 large or 30 sticks	12 g
relish, sweet	0.34	1 Tbsp (15 mL)	5 g
salsa	0.05	¼ cup (60 mL)	3 g
sherbet	0.29	⅓ cup (75 mL)	15 g
soft drink, regular (with flavour)	Varies	½ cup (125 mL)	11–17 g
sugar	1.0	1 Tbsp (15 mL)	15 g
syrup	0.61	1 Tbsp (15 mL)	12 g
syrup, no sugar added	0.15	¼ cup (60 mL)	9 g

## Foods with a little carbohydrate

Foods listed below are for a ½ cup (125 mL) serving unless another serving size is stated.

Higher Carbohydrate Vegetables	Carbohydrate factor	Available carbohydrate
artichoke	0.08	7 g
beets, cooked	0.08	7 g
carrots, cooked or raw	0.06	5 g
mixed vegetables, cooked	0.10	10 g
onions, cooked	0.08	9 g
peas, green, raw or cooked	0.09	7 g
rutabaga, cooked	0.07	6 g
squash, hubbard, butternut, cooked	0.09	9 g
tomato juice, vegetable cocktail	0.04	5 g
tomato paste, canned, 2 Tbsp (30 mL)	0.15	5 g
tomato, sauce, canned	0.04	5 g
tomato, stewed	0.05	7 g

Lower Carbohydrate Vegetables	Carbohydrate factor	Available carbohydrate
asparagus, cooked	0.02	2 g
bean sprouts, raw	0.04	2 g
beans (yellow or green), cooked	0.05	4 g
broccoli, cooked or raw	0.05	3 g
Brussels sprouts, cooked	0.04	3 g
cabbage, Chinese, cooked or raw	0.01	1 g
cabbage, green or red	0.04	1 g
cauliflower, raw or cooked	0.02	1 g
celery, raw or cooked	0.01	1 g
chard, cooked	0.02	2 g
cucumber, raw	0.03	2 g
eggplant, cooked	0.06	3 g
kale, raw or cooked	0.06	2 g
leeks, cooked	0.07	4 g
lettuce, raw	0.02	1 g
mushrooms, cooked or raw	0.03	2 g
okra, cooked	0.02	2 g
peas, green snap, raw	0.05	2 g
peppers, green, raw	0.03	3 g
peppers, red, raw	0.05	4 g
rapini, raw	0.00	0 g
rhubarb, raw	0.03	2 g
spinach, raw or cooked	0.01	0 g
squash, spaghetti, cooked	0.05	4 g
tomato, fresh	0.03	3 g
turnips, cooked	0.03	3 g
zucchini, cooked or raw	0.02	1 g

## Foods with little or no carbohydrate

Protein and fat are important parts of your meals. They don't raise your blood sugar like carbohydrates do, but they do add to the total calories that you eat. Eating healthy portions of foods with protein and fat along with foods that have carbohydrate helps to slow down the rise in your blood sugars after you eat.

Speak with your dietitian about the amounts of protein and fat that are right for your health goals.

If the package of the food you eat has a Nutrition Facts table, use the carbohydrate information from the package, instead of the information in the tables below. The Nutrition Facts table has more exact carbohydrate information for that food.

Meat and Protein Alternatives	One serving	Available carbohydrate
cheese	1 ounce (30 g)	0 g
cottage cheese	¼ cup (60 mL)	2 g
edamame	½ cup (125 mL)	7 g
eggs	1	0 g
fish, fresh, cooked, or canned	1 ounce/30 g (¼ cup/60 mL)	0 g
meat, deli or processed, wieners	1 ounce (30 g)	1 g
meat, poultry	1 ounce (30 g)	0 g
meatless soy protein products (such as vegetarian ground round)	⅓ cup (75 mL) or 55 g	Varies – read labels
tofu, firm or soft	½ cup (125 mL) or 100 g	2 g

Beans and lentils are in the *Starchy vegetables* list on page 3.

Fats	One serving	Available carbohydrate
avocado	⅛	0 g
bacon	1 slice	0 g
butter	1 tsp (5 mL)	0 g
cheese, spreadable	1 Tbsp (15 mL)	1 g
gravy	2 Tbsp (30 mL)	1 g
margarine, non-hydrogenated	1 tsp (5 mL)	0 g
mayonnaise	1 Tbsp (15 mL)	0 g
nuts, almonds	¼ cup (60 mL)	3 g
nuts, cashew	¼ cup (60 mL)	10 g
nuts, peanuts	¼ cup (60 mL)	5 g
oil, canola or olive	1 tsp (5 mL)	0 g
olives (black or green)	10 large, 15 small, or 8 pickled	1 g
peanut butter and other nut butters	1 Tbsp (15 mL)	2 g
salad dressing	1 Tbsp (15 mL)	2 g
seeds, chia, flax, sesame, or sunflower	1 Tbsp (15 mL)	0 g
sour cream (regular or lower fat)	2 Tbsp (30 mL)	1 g
tahini	2 tsp (10 mL)	2 g
whipped topping, regular	2 Tbsp (30 mL)	1 g



