



## FACT SHEET:

# Carbohydrate counting

Foods that contain carbohydrates, or carbs, are an important source of fuel for your body. Your body breaks down carbs into glucose in the intestines. Then, glucose goes into the bloodstream. After that, insulin, a hormone, moves glucose from the bloodstream into the cells where it is used by the body for energy.

When you are living with diabetes, it is important to understand the effect that carbs have on your blood glucose levels. This can help you manage your diabetes.

## Why are carbs important?

All the carbs you eat and drink change into glucose within about two hours, which affects your body's blood glucose level. Eating carb foods evenly throughout the day can help maintain energy levels and keep your blood glucose levels within your target range.

- Eating or drinking large amounts of carbs at one time can result in high blood glucose levels within a few hours.
- Eating too little carbs or skipping a meal can result in low energy levels.
- If you take insulin or certain types of blood glucose-lowering medicines, eating less carbs than usual can lead to hypoglycaemia (also known as a hypo or low blood glucose level).

- Meals that are high in protein and fat may influence your blood glucose levels, though much less than carbs. Speak to your dietitian to learn how to manage this.

## What are carbs?

Carbs are:

**Sugars**, such as the natural sugar in fruit and milk or the added sugar in soft drinks, sweets and many packaged foods.

**Starches**, including grains such as wheat, rye, barley, oats, rice and other grains, and foods made from these grains; starchy vegetables such as corn, sweet potatoes and potatoes; and legumes such as dried beans, lentils, and dried peas.

Sugars and starches raise your blood glucose levels.

## What is carb counting?

Carb counting is about keeping a count or measure of the amount of carbs you eat and drink throughout the day. Carb counting helps you to better manage your diabetes.

## Why do I need to count my carbs?

- Carb counting is important if you take insulin to manage your diabetes. Learning to count the amount of carbs in your food and drink can help you match your carb intake to your insulin dose. This allows you to be flexible about when you eat and can help to improve your blood glucose levels.
- If you take medications other than insulin you may also find carb counting useful. Avoiding too much or too little carbs can help to keep your blood glucose levels in balance.
- Carb counting does not suit everyone, and you may choose to eat similar foods at the same time each day, rather than practise carb counting.

## How do I count carbs?

There are many ways to count the amount of carbs in food. Your diabetes management plan can help you to decide which method is best for you. For more information about different methods of carb counting and what is best for you, please talk to your doctor or dietitian.

The three main ways used to count carbs are:

1. Working out the **grams of carbs** in a meal, snack or drink. This method is usually used by people managing their diabetes with an insulin pump or taking insulin by multiple daily injections (MDIs). If you use this method, your diabetes health professionals will help you to work out your carb ratio. So, you can calculate the amount of insulin you need to take in order to match the grams of carbs you are eating or drinking.
2. Using **carb portions** (CPs), where one CP is the amount of a food that contains approximately 10 grams (g) of carbs. This method is most commonly used by people who follow the Dose Adjustment For Normal Eating (OzDAFNE) program. With this method your diabetes health professionals will help you to work out how much insulin to take for each CP.

3. Using **carb exchanges**, where one exchange is the amount of a food that contains approximately 15 g of carbs. You can use this method if you want to eat or drink a similar amount of carbs at each meal and snack (if you include them), but still include a variety of different foods from day to day. Carb exchanges are explained in more detail on the next few pages.

A single exchange is an amount of food that contains approximately 15 g of carbs. Exchanges do not refer to the actual weight of a food. For example, one slice of bread may weigh 40 g but only contain 15 g of carbs, or one exchange.

Different carb foods can be 'exchanged' for one another so that you are eating similar amounts at each meal and snacks (if you have them). Some examples of one carb exchange include:

- 1 regular slice of bread
- 1 medium apple
- 1/3 cup of cooked rice
- 1 cup of milk.

## How much carbs should I eat?

The following table is a general guide only to the amount of carbs an average man or woman may need at each main meal of breakfast, lunch and dinner. A healthy diet can include more or less carbs than this.

### General guide to the amount of carbs at each main meal

	Grams (g) of carbs at main meals	Carb exchanges
Women	30–45 g	2–3
Men	45–60 g	3–4

## What about snacks?

Most people who need to take insulin or glucose-lowering medications do not need snacks through the day or before bed to prevent a hypo. For some people a snack may be recommended. Please talk to your diabetes health professional about whether this applies to you.

If you wish to include snacks in your meal plans, please talk to your dietitian about how to best do this.

For adults requiring a carb snack, a general guide is to aim for 1–2 carb exchanges per snack (15–30 g of carbs).

## Sample meal plan

This meal plan is an example of what carb counting looks like for someone who wants to eat a similar amount of carbs from day to day. Each main meal provides three (3) carb exchanges and each snack provides one (1) carb exchange. The carbohydrate foods are in bold.

### Sample meal plan

Meal	Food	Carb exchanges
Breakfast	½ cup <b>natural muesli</b> with 1 cup <b>low-fat milk</b>	3
Snack	1 small <b>banana</b>	1
Lunch	2 slices <b>wholegrain bread</b> with ½ cup <b>baked beans</b>	3
Snack	1 <b>apple</b> and 30 g unsalted raw nuts	1
Evening meal	100 g grilled chicken/beef/tofu stir-fried with ginger and garlic, 2 cups mixed non-starchy vegetables, and served with 1 cup cooked <b>basmati rice</b>	3
Snack	150g <b>yoghurt</b> with 1 cup <b>berries</b>	1



## Carb exchange list

The following list provides information about serving sizes of foods that are equal to one exchange (approximately 15 g of carbs). Note these are provided as a general guide only. The amount of carbs in food can vary between brands. Please talk to your doctor or dietitian for guidance on foods that are best suited to help you manage your diabetes.

### Carb exchange list

Carb food	One exchange (15 g of carbs)
Bread and bread products	<ul style="list-style-type: none"> <li>1 regular slice of bread/fruit bread</li> <li>1 small roti/chapati</li> <li>1 crumpet – round shape</li> <li>½ bread roll or ½ English muffin</li> <li>½ wrap</li> <li>½ pita ‘pocket’ bread or ¼ large pita bread</li> <li>¼ bagel</li> </ul>
Breakfast cereals	<ul style="list-style-type: none"> <li>1/3 cup raw rolled oats</li> <li>¼ cup natural muesli</li> <li>1½ wheat biscuit type cereal</li> <li>½ cup flake type cereal with dried fruit depending on brand</li> </ul>
Rice/pasta/ grains/flour	<ul style="list-style-type: none"> <li>½ cup cooked pasta</li> <li>1/3 cup cooked noodles (rice/egg/soba)</li> <li>1/3 cup cooked rice/couscous</li> <li>1/3 cup cooked barley/bulgur (cracked wheat)</li> <li>½ cup cooked quinoa/millet/buckwheat groats</li> <li>2 tablespoons flour/corn flour/raw polenta</li> <li>½ cup chickpea or soy flour</li> </ul>
Biscuits/ crackers	<ul style="list-style-type: none"> <li>10 rice crackers</li> <li>1½ thick/3 thin rice or corn cakes</li> <li>2-4 plain crispbreads, medium size</li> <li>6 plain crispbreads, small squares/rounds</li> <li>2 plain sweet biscuits/fruit slice biscuit</li> </ul>
Starchy vegetables	<ul style="list-style-type: none"> <li>1 small potato (100 g) or ½ cup mashed potato</li> <li>½ cup sweet potato (100 g)</li> <li>½ cup sweet corn kernels or 1 medium cob (170 g)</li> </ul>
Legumes	<ul style="list-style-type: none"> <li>½ cup cooked/canned bean mix including chickpeas, kidney beans, cannellini beans, baked beans</li> <li>¾ cup cooked/canned lentils</li> <li>1 cup edamame (green soybeans)</li> </ul>

## Carb exchange list

Carb food	One exchange (15 g of carbs)
Fruit	1 medium (150 g) apple or pear 1 medium (160 g) orange 1 large (200 g) peach or nectarine 1 small (130 g) banana (½ medium) 1 small (200 g) mango (½ medium) 3 large apricots or plums (200 g) 2 medium mandarins (150 g) 2 kiwifruits (170 g) 1½ cups (250 g) diced rockmelon/watermelon/honeydew 1 cup (150 g) blueberries/cherries/canned fruit (drained) ½ cup (100 g) grapes 1½ tablespoon (25 g) sultanas 6 dried prunes (50 g) 4 pitted dates (20 g)
Milk and milk products or alternatives	1 cup (250ml) milk or soy milk ½ cup evaporated skim milk 200 g diet yoghurt/natural yoghurt 100 g low-fat fruit yoghurt ½ cup low-fat custard

### Nutrition information

Serving per package: 5

Serving size: 140g

		Quantity per serving	Quantity per 100g
Energy		285KJ	203KJ
Protein		0.5g	0.3g
Fat	– Total	0.1g	0.1g
	– Saturated	0.1g	0.1g
Carbohydrate	– Total	15.5g	1.1g
	– Sugars	12.2g	8.7g
Sodium		7mg	5mg

## Reading food labels

For packaged foods, checking the nutrition information panel on food labels is the best way to work out the number of carb exchanges in a food. The nutrition information panel shows the total grams of carbs in each serve.

For example, a single serve of this food is 140 g and provides 15.5 g of carbs, which is equal to one carb exchange. Make sure you check how many 'serves' there are in a packet to make sure you are eating or drinking the suggested serving size.

The table below can help you count the number of carb exchanges that are contained in food when reading a nutrition information panel.

### Number of carb exchanges

Total grams (g) of carbs per serve	Carb exchanges
7–11 g	½
12–18 g	1
19–26 g	1.5
27–33 g	2
34–41 g	2½
42–48 g	3



### More information and support

- Go to the Carb Counting program online at [ndss.com.au](https://ndss.com.au) to learn more about carbs.
- Go to [ndss.com.au](https://ndss.com.au) to search for 'Understanding food labels', 'Making healthy food choices' and 'Hints for healthy cooking' fact sheets.
- Go to [dietitiansaustralia.org.au](https://dietitiansaustralia.org.au) or call Dietitians Australia on **1800 812 942**. A dietitian can provide guidance on carb counting.

To read more about carb counting, we recommend the following resources:

- The Traffic Light Guide System carbohydrate counter [trafficlightguide.com.au/site/pag21.php](https://trafficlightguide.com.au/site/pag21.php)
- Calorie King Australia food database [calorieking.com/au/en](https://calorieking.com/au/en)
- Allan Borushek's Calorie, fat & carbohydrate counter [calorieking.com/au/en/products/books](https://calorieking.com/au/en/products/books)

For day-to-day carb counting support, we recommended the following applications (apps):

- The Traffic Light Guide to Food app [trafficlightguide.com.au](https://trafficlightguide.com.au)
- CalorieKing Australia Food Search app [calorieking.com/au/en/products/food-search/](https://calorieking.com/au/en/products/food-search/)



## Top tips

- Foods that contain carbohydrate are an important source of fuel for your body.
- When you know how carbs affect your blood glucose levels and how much carbs there are in what you eat and drink, this can make it easier to manage your diabetes.
- The amount of carbs you need each day depends on many factors, including your age, gender, weight and activity levels.
- There are different ways to count the amount of carbs in food and drinks including carb grams, portions and exchanges.
- Speak to a dietitian about your individual carb needs so you can best manage your blood glucose levels. A dietitian can also provide you with more information about different methods of carb counting and help you learn how to count carbs in a way that best fits in with your individual diabetes management plan.
- Counting carbs can be hard at first. With practice and support from your diabetes health professional it becomes much easier.

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## The NDSS and you

Whether you have just been diagnosed with diabetes, or have been living with diabetes for a while, the NDSS provides a range of support services, information, and subsidised products to help you manage your diabetes, stay healthy and live well. For access to more resources (including translated versions), or to find out more about support services, go to [ndss.com.au](http://ndss.com.au) or call the NDSS Helpline on **1800 637 700**.

This information is intended as a guide only. It should not replace individual medical advice and if you have any concerns about your health or further questions, you should contact your health professional.