

Carbohydrate awareness: A rough guide to the carbohydrate content of food

What is carbohydrate?

Carbohydrate is an important source of energy for the body. It is broken down by the body into glucose (the simplest form of sugar), and provided the body has enough insulin, this is used by the cells of the body as fuel to provide energy.

Carbohydrate is found in many different foods. There are two forms of carbohydrate:

- starchy carbohydrates
- sugars.

Starchy carbohydrates include foods like bread, potatoes, rice, pasta, noodles, breakfast cereals and foods made with flour such as biscuits, crackers, cakes, pies and pastries.

Sugars include table sugar, caster sugar, granulated sugar, icing sugar (sucrose), honey, and foods made with sugar such as sweets, chocolate, jam and marmalade. Sugar is also found naturally in fruit and fruit juice (fructose), and in milk and some dairy foods such as yoghurt, fromage frais and ice cream (lactose).

All carbohydrates, whether starchy carbohydrates or sugars, break down into glucose and raise your blood glucose levels. The amount of carbohydrate that you eat and drink at an individual meal or as a snack has the biggest effect on your blood glucose level. Being aware of how much carbohydrate you are eating and controlling your portion sizes at mealtimes, may help you to improve your diabetes control.

How much carbohydrate do I need to eat?

Your diabetes dietitian will advise you about how many carbohydrate portions to eat at mealtimes, taking into account factors such as your age, weight, physical activity level, your diabetes treatment and your blood glucose levels. Roughly a quarter of your plate at mealtimes should be made up of starchy carbohydrate foods.

How to balance your plate at mealtimes

The plate model below shows a healthy, balanced meal. Half your plate should be vegetables or salad, a quarter of your plate should be protein rich food (e.g. meat, fish, chicken, eggs or vegetarian alternatives to meat such as Quorn, soya protein, etc.). The remaining quarter of your plate should be starchy carbohydrate food (e.g. potatoes, rice, pasta, noodles, chips, etc.)



Carbohydrate Counting

Carbohydrate counting is a way of matching your insulin or diabetes medication requirements with the amount of carbohydrate that you eat and drink, so that your blood glucose levels stay under better control.

If you are taking tablets for your diabetes and/or inject fixed amounts of insulin, then you should try to have regular meals and eat roughly the same amount of carbohydrate at meal times each day. This is to help control your appetite and blood glucose levels after eating.

If you are on basal-bolus insulin therapy, that is, a combination of quick-acting insulin at mealtimes and long acting insulin once or twice a day, then carbohydrate counting can help you to vary your meal time insulin doses at mealtimes to match what you have to eat and drink. For many people, this is a more effective way of controlling your blood glucose levels, and gives you more flexibility and freedom to eat what you want and when you want to eat. It is an approach that initially will need a lot of time and effort on your part, so that you can learn about the carbohydrate content of different foods and know how to adjust your meal time insulin in relation to what you have to eat and drink, your blood glucose levels and how active you are. You will need to be dedicated to monitoring your blood glucose levels frequently, at least 4 times a day (i.e. before each meal and before you go to bed), so that with the help and support of your diabetes specialist nurse or dietitian, you can work out how much insulin you need, for the different foods and drinks that you eat.

You may be invited to attend a diabetes education course to help you to learn to carbohydrate count and to adjust your insulin. Your diabetes healthcare team will advise you if they feel that the course is suitable for you, or if they feel that a one-to-one education session with the diabetes dietitian is more suitable for you.

A brief list of the carbohydrate content of different foods is listed below. For reference, 10 grams of carbohydrate = 1 carbohydrate portion (CP).

| Food | Portion size | Carbohydrate portion (CP) |
|--------------------------|----------------------------------|---------------------------|
| Breakfast Cereals | | |
| Bran Flakes | 30 grams / 1 oz. / 4 tablespoons | 3 |
| Corn Flakes | 30 grams / 1 oz. / 5 tablespoons | 2½ |
| Rice Krispies | 30 grams / 1 oz. / 7 tablespoons | 3 |
| Shreddies | 30 grams / 1 oz. / 3 tablespoons | 2½ |
| Weetabix | 2 biscuits | 2½ |

| | | |
|-----------------------------|-------------------------------------|-----|
| Porridge made with milk | 200 grams / 7 oz. | 3 |
| Bread | | |
| Bread, large loaf | 1 thick slice | 2 |
| Bread, large loaf | 1 medium slice | 1½ |
| Bread, small loaf | 1 slice | 1 |
| Bread roll | 1 medium sized roll | 2½ |
| French bread stick | per inch slice | 1 |
| Pitta bread | 1 medium, 60 grams | 3½ |
| Naan bread | 1 large | 9 |
| Bagel | 1 bagel, 70 grams | 4 |
| Potatoes | | |
| Boiled potato | 1 egg sized, 60 grams | 1 |
| Mashed potato | 1 scoop, 60 grams | 1 |
| Chips | 100 grams, 12 chips | 3 |
| Jacket potato | Small, 100 grams | 3 |
| Jacket potato | Medium, 180 grams | 5½ |
| Jacket potato | Large, 330 grams | 10 |
| Pasta and rice | | |
| Cooked pasta | 30 grams / 1 oz. / 1 tablespoon | 1 |
| Cooked rice | 30 grams / 1 oz. / 1 tablespoon | 1 |
| Lasagne meal | 1 individual, 300 grams | 4½ |
| Pies and pastries | | |
| Meat pie / pasty | 1 individual, 160 grams | 4 |
| Quiche | 1 slice, 140 grams | 2½ |
| Pork pie | 1 individual, 140 grams | 3½ |
| Croissant | 1 medium, 60 grams | 2½ |
| Pizza | | |
| Pizza, deep pan | 9 inch, medium size | 14½ |
| Pizza, thin crust | 9 inch, medium size | 9 |
| Milk and dairy foods | | |
| Milk, all varieties | 200 mls / 1/3 pint | 1 |
| Yoghurt, low fat | 1 small pot, 125 grams | 1½ |
| Ice cream | 1 scoop, 50 grams | 1 |
| Custard, homemade | 140 mls / 5 fl. oz. / ¼ pint | 2½ |
| Fruit | | |
| Apple / pear / peach | 1 medium, 150 grams | 1½ |
| Banana | 1 medium, 100 grams | 2 |
| Grapes | Small bunch, 100 grams | 1 |
| Satsuma | 2 small satsumas | 1 |
| Strawberries | 10 medium | 1 |
| Fruit juice | 200 mls / 8 fl. oz. / 1 small glass | 2 |
| Biscuits / crackers | | |
| Cream crackers | 2 | 1 |
| Ryvitas | 2 | 1 |
| Digestive / Hob Nob | 1 plain biscuit | 1 |
| Rich Tea | 2 biscuits | 1 |

For further advice and information about carbohydrate awareness and carbohydrate counting, please contact:

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