

Are carbohydrates good, bad or ugly? With all the confusing messages out there, it's sometimes tough to know whether to carb or not to carb. Sweet's dietitian, Azmina Govindji, gives you the definitive answers on low carbs, no carbs and slow carbs.

# Carbs are not the enemy!

So what exactly is carbohydrate? Let's get the chemistry lesson out of the way. Carbohydrates are made up of carbon, hydrogen and oxygen (hence the name). When the molecules are arranged in a certain way with a certain number of each of these elements, they form a simple sugar, glucose. If glucose molecules are bonded together, they become longer chain molecules that are called disaccharides (two sugar molecules) and polysaccharides (lots of sugar molecules combined to form starches). All carbohydrates are made up of units of sugar (also called saccharide units).

Simple sugars are found in sugary drinks and foods. It doesn't take a scientist to realise that the body won't need to work very hard to break down a simple sugar, as it is made up of only one or two saccharide units. So in diabetes, these sugary foods and drinks can make your blood glucose rise quickly and are thus best kept to a minimum unless you need them for exercise, during illness or to treat low blood sugar. Whether you have diabetes or not, these simple sugars can be damaging to your teeth, especially if you sip a sugary drink throughout the day, or eat sticky sweets.

Since the polysaccharides (sometimes called complex carbohydrates) take more effort to digest and assimilate in the body, they can be considered preferable to simple sugars. Carbohydrate is an important source of energy for the body. When you have to run for a bus, it is the stored carbohydrate

in your body that is quickly broken down into glucose and released into the bloodstream to allow you a sudden burst of energy that you'll need to catch the bus (hopefully!). But carbs vary in the way they work.

## High-fibre carbs

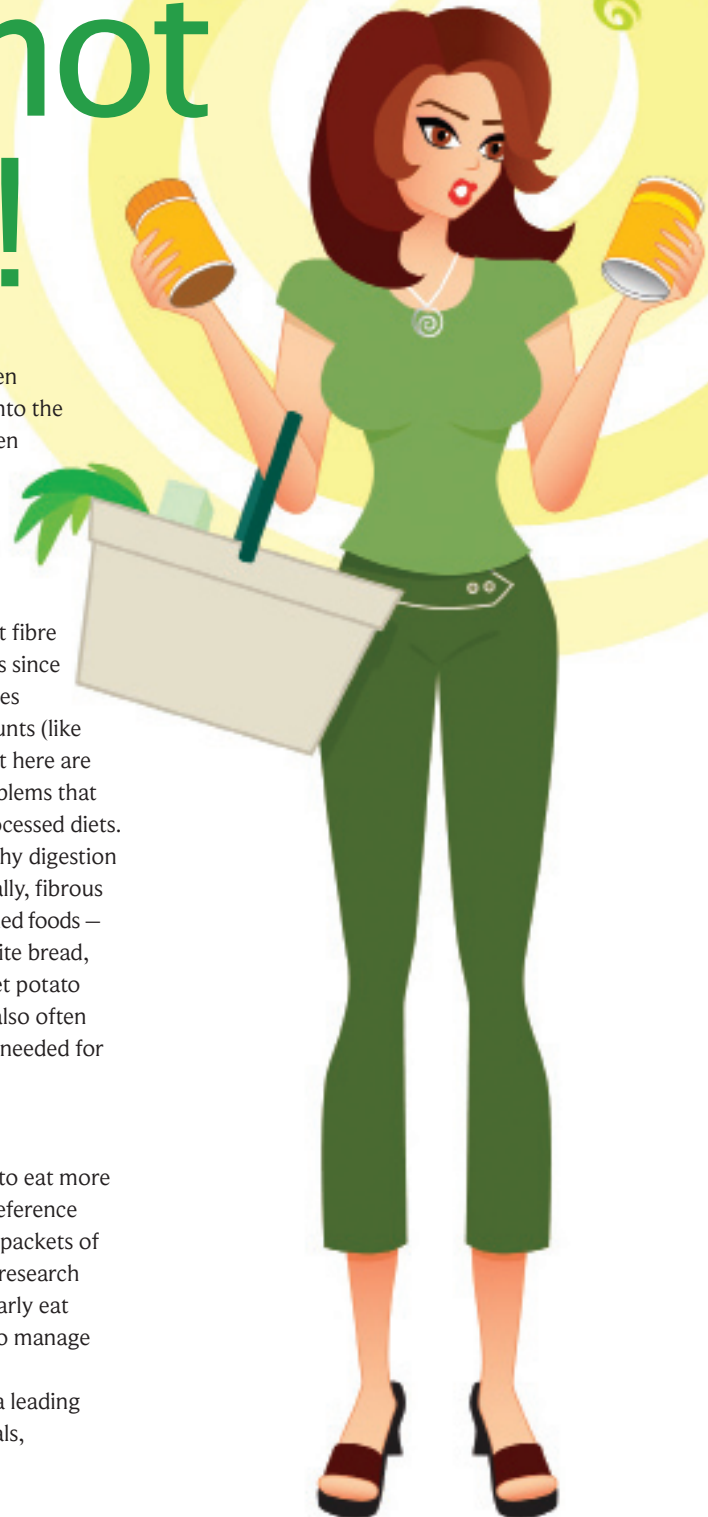
It won't come as news to you that fibre is a good thing. We've known this since hunter-gatherer days, and in places where fibre is eaten in large amounts (like rural parts of Africa), we find that here are fewer incidences of digestive problems that accompany more refined and processed diets.

Fibre helps to promote a healthy digestion and prevent constipation. Generally, fibrous foods are healthier than more refined foods – compare wholemeal bread to white bread, brown pasta to white pasta, jacket potato to chips. Fibre-containing foods also often have more B vitamins, which are needed for nervous energy.

## Wholegrain carbs

People with a healthy heart tend to eat more wholegrain foods. You may see reference to heart health on food labels on packets of wholegrain cereals. There is also research to suggest that people who regularly eat wholegrains may be better able to manage their weight.

Speaking at Nutrition in Life, a leading conference for health professionals,



Lynne Garton, independent nutritionist at [www.alimenta.co.uk](http://www.alimenta.co.uk), commented: 'Populations who eat three or more servings of wholegrain foods a day appear to have a reduced risk of developing diabetes. Although the exact mechanisms for this are unknown, it is thought that the presence of fibre, as well as the type of carbohydrate present in wholegrains, have favourable actions on insulin and blood sugar. As the name suggests, wholegrains are grains that contain all the three parts of the grain, the fibre-rich bran, the starchy endosperm and the nutrient-rich grain. When grains get processed the bran and grain are removed, resulting in the loss of a number of important nutrients. It is thought that all these nutrients work together to bring about wholegrains' health benefits.'

## Low-GI carbs

These are the sexy ones... where eating carbs doesn't only become 'legal', it's positively beneficial!

When you eat carbohydrate food (such as bread, potatoes, pasta, cereals and sugary foods), your body digests it and converts it to glucose (sugar); this can then be used for energy. As the carbohydrate gets digested to glucose, the glucose level in your blood rises. In other words, each time you eat a carbohydrate food, the blood glucose level in your body rises.

We know different foods cause the blood glucose to rise at different speeds. Some carbs cause quick and sharp rises in your blood glucose levels and these are best kept to a real minimum. Other foods cause a slow and

gradual rise in blood glucose; these can help you keep an eye on your levels. I like to call them slow carbs.

## The glycaemic index

The glycaemic index (GI) is simply a ranking of foods based on the speed at which they raise blood glucose levels. Each food is given a number. Foods that break down quickly are given high numbers – they raise blood glucose rapidly, and are said to have a high glycaemic index. Foods that break down slowly are given low numbers – they raise blood glucose more gradually, and have a low glycaemic index.

The glycaemic index has been researched around the world for years and studies on GI have been extensively published in medical journals. Since foods that take a long time to digest tend to make your blood glucose rise slowly, the key is to choose those foods that take longer to be broken down in your gut. 'Whole' foods, such as wholegrains, and those high in a particular type of fibre called 'soluble fibre', such as kidney beans, will take longer to be broken down by the body compared to, say, a sugary drink. The grains and beans will thus cause a slower rise in blood glucose. These foods have a relatively low GI. Filling up on low-GI carbohydrate foods at meals and snacks will mean there's less room for fat, so when you're watching your weight, they can also help you keep your calories down.

When you eat a low-GI meal, this isn't only of benefit for your blood glucose level after that meal. The low glycaemic effect of that meal can actually help keep blood glucose more even during the whole day.

There are lists of the GI rating of different foods, but this is of limited value because GI is affected by the cooking method, what else you eat the food with, how it is processed, even where the original starchy food was grown! But it is helpful to have an idea of which foods generally are low GI, so you can include them regularly in your meals. More on this later.



## How much carb?

The actual amount of carbohydrate that the body needs varies depending on your age, weight and activity levels. Diabetes UK recommends it should make up about half of what you eat and drink over a week. Yes, half! Why? We all need carbs and they should form the basis of your meals. They are recommended as a large section of the Food Standards Agency eatwell plate. But it's not all carbs that are recommended, it's those healthy ones that

## Keeping the kids healthy

*Nigel Denby, registered dietitian and founder of Grub4Life, advises on carbs for kids:*

'As well as being an important part of a healthy diet for people with diabetes, starchy carbohydrates and wholegrains are important for the rest of the family too. Different types of breads like pitta, granary bread soldiers and soft rolls make great finger foods for weaned babies. Toddlers need plenty of energy, and starchy carbohydrates like pasta, rice and potatoes are a versatile and inexpensive base for family meals.

'Teenagers often look for frequent, quick snacks and meals. Fortified breakfast cereals with milk, sandwiches with low-fat protein like turkey, wafer-thin ham or tuna are filling and nutritious. The best carbohydrate tip for a healthy diet, and to keep an eye on the pennies, is to keep a variety of starchy carb staples in stock, which will keep all the family satisfied with tasty, filling and nutrient-packed snacks and meals.'

**'Different foods cause blood glucose to rise at different speeds. Some carbs cause quick and sharp rises in your blood glucose levels; these are best kept to a real minimum'**

are high in fibre, or are wholegrain. These carbs are often also low GI – they make your blood glucose rise slower than other more refined or processed carbs.

Base your meals on wholegrain carbs whenever you can. If you have type 1 diabetes, you are likely to be taking insulin injections or

## 'Foods that break down slowly are given low numbers; they raise blood glucose more slowly, and have a low GI'

using a pump. The carbohydrate you eat needs to be matched by the insulin. If you are taking insulin twice daily, then it's best that you know how much carbohydrate you are eating, so you can balance this with your insulin in an aim to keep your blood glucose levels steady. Eat roughly the same amount of carbohydrate at similar times of the day. The carbs should fill around a third of your plate. Too much may provoke a spike in your blood glucose and too little may cause a hypo (low blood glucose).

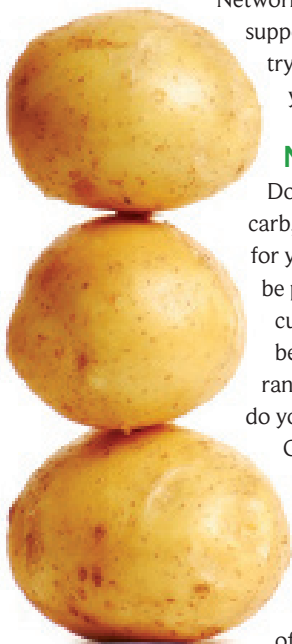
Some people with type 1 diabetes count the amount of carbohydrate they eat at each meal and snack. This is best done with the help of a registered dietitian. The Diabetes Education

Network runs courses to help support you if you wish to try out carb counting for your diabetes.

### No carb – no good

Don't be tempted to go low carb, there is really no need for you to do this and it could be potentially harmful. If you cut out carbs, you could be missing out on a whole range of nutrients. And what do you replace the carbs with?

Often low carb means high fatting and eating more fat, especially saturated fat, isn't conducive to healthy eating. Low-carb diets often also encourage you



## Good carbs to base your diet on

### Bread

Choose grainy, dense breads with whole seeds for your sandwiches or with your main meal. Multigrain, granary, stoneground, rye, 100 per cent stoneground wholemeal, oat bran, barley and pitta breads are all good choices. Wholegrain breads make a lot of sense – and one slice counts towards your three servings of wholegrains a day.



### Rice

Avoid high-GI rice, such as jasmine or sticky rice, instead choose basmati, long-grain or brown rice. For an alternative to pasta or rice, bulgur wheat (cracked wheat) has a low GI and tastes great in salads.



### Potatoes

Most potatoes will have a high GI, but new potatoes are slightly lower. They are, however, a nutritious part of the diet, so rather than cutting them out make sure you include other low-GI carbohydrates with them. Alternatively, why not try sweet potatoes, these have a low GI and taste delicious when baked or mashed.



### Beans and pulses

As well as being good on the GI front, beans and pulses are also a great source of protein, iron and fibre. Try to include them in your mealtimes wherever possible. Have stir-fried beans, beanie casseroles and soups, or just chuck them into any salad; they will help lower the GI of the meal.



### Pasta

A favourite lunchtime salad or as your main meal, most pasta has a low GI. Cook until al dente and remember, watch what you serve them with! Avoid creamy cheesy sauces if you're watching your weight. And eating massive portions can negate the benefit of a low-GI food, so don't go wild. Three heaped tablespoons of boiled wholegrain pasta counts as one serving of wholegrain.



### Vegetables, salad and fruit

Vegetables and salad should always feature in your lunch and main meals. Fresh, frozen and canned all count towards your five-a-day recommended amounts – the more variety and colour the better. They are great for lowering the GI of a meal and full of important vitamins, minerals and antioxidants. Choose fruit after your main meals.



Adapted from *The GI Plan* by Azmina Govindji and Nina Puddefoot (Vermilion, £7.99).

to avoid fruit and veg (or at least cut down on them) and this goes against a whole host of studies that prove the benefits of fruit and veg in terms of disease prevention.

### Which carb?

The low-GI slow carbs offer particular benefits in diabetes. They are slowly digested and promote gradual and steady rises in blood glucose. And wholegrain carbs, many of which are also low GI, have been shown to be heart healthy as part of a balanced lifestyle.

So, say 'no' to no carbs, and 'go' to slow carbs. The bottom line is that in the game of carbs, it's the slow carbs that win. Choose them with every meal. Anyone for wholegrain pasta? ■

## Find out more

### Diabetes Education Network

[www.diabetes-education.net](http://www.diabetes-education.net)  
Runs courses on carb counting, as well as others relating to diabetes education.

### Food Standards Agency

[www.eatwell.gov.uk](http://www.eatwell.gov.uk)  
Provides lots of information about food and nutrition, including the eatwell plate.

### Grub4Life

[www.grub4life.org.uk](http://www.grub4life.org.uk)  
Sign up for recipes, tips and information about children's nutrition.