

Carbohydrates

There are many types of carbohydrate found in foods, which can be eaten as part of your diet. Typically, carbohydrates can be divided into the following categories:

- **simple/free sugars**
(jam, sweets, fruit juice)
- **complex/starchy carbohydrates**
(bread, rice, potato).

This idea can be taken further, as some sources of carbohydrate even if they are complex/starchy can be highly refined or processed, e.g. white bread whereas others are less refined, typically the wholegrains, e.g. wholegrain bread.

All carbohydrates will be broken down into simple 'glucose' or 'sugar' in our body. Simple/free sugars will break down quickly, whilst complex/starchy carbohydrates will break down slowly. This 'glucose' or 'sugar' is used as a source of energy by the body. On a day-to-day basis our bodies will use a combination of glucose, fats and proteins for energy, growth and repair.

Why do we need carbohydrates?

All carbohydrates will be converted to glucose, which can be used by our body as a source of energy, to keep our muscles and organs working.

What happens if we don't get enough carbohydrate?

If we do not have enough carbohydrate in our diet, our bodies can convert fatty acids into 'energy' to meet the demands of our brain. This causes the increase in levels of ketones in our bodies, which in rare cases has caused serious problems. It is very rare that you would have insufficient carbohydrate in your diet unless chronically malnourished or following an extremely low carbohydrate diet which



is also lacking in protein. There are a lot of myths about not eating enough carbohydrate or not eating carbohydrate frequently enough. Some people with diabetes can be at risk of hypoglycaemia (too little blood glucose), which can be a result of a mismatch of dietary carbohydrate with medication and exercise. This potentially can also happen in some athletes performing endurance exercise. For most people this is rarely an issue, and if symptoms of low blood sugar occur, these should be medically investigated.

Our brains tend to favour using glucose for energy, if we don't have enough in our diets, then our brains have to adapt to using fats called ketones. While this adaptation is happening, the body has to use breakdown protein, which could lead to loss of muscle.

How much carbohydrate should we eat?

This is a question that confuses so many people. Whilst 'very low carbohydrate diets' are not generally recommended, as a nation our portion sizes have increased dramatically over the past 40 years. We should try to be 'carbohydrate aware', aiming to have appropriate portions of 'starchy carbohydrate' and choosing the less processed, wholegrain options to increase fibre intake where possible. As a general rule, a portion about the size of your fist is an appropriate meal time portion of carbohydrate. This can then be adjusted

depending on your activity levels. According to scientific experts around half of our energy intake should come from carbohydrate.

Don't carbohydrates lead to weight gain?

We get the energy in our diet from foods containing; carbohydrates, protein, fat and alcohol. Any extra (unneeded) energy we take in will be converted to fat no matter what the source. Carbohydrate contained in food, isn't directly 'fattening', however it can be very easy to eat too much (and too much of any food leads to weight gain) or add unnecessary or extra fatty foods to carbohydrate based foods. For example pasta will not make you gain weight, however eating five times more than you need smothered in a creamy sauce will contribute to weight gain.

Can 'low carbohydrate' diets help with weight loss?

At the moment, there are no clear definitions on what 'low carbohydrate' diets are. Some people claim this is an effective method of weight loss, however they are rarely sustainable and most of the initial weight loss seen is often associated with water/fluid losses.

In general, it is a good idea to be aware of portion sizes of all foods including carbohydrate, however it is never a good idea to 'over-restrict' any one food group (including carbohydrate), as this can mean it is more difficult to achieve a balanced diet overall.

What does the Glycaemic Index of carbohydrates mean?

Different carbohydrate containing foods are digested and absorbed at different rates. The Glycaemic Index (GI) is used to identify which carbohydrates are quickly broken down to glucose (high GI) and which are slowly broken down (low GI). This is based on the concept that it is better to choose lower GI foods where possible. GI is well accepted as a way of judging the effect of carbohydrate containing foods on our bodies, however the methods used to measure it do not

always appropriately represent the overall 'health benefits' of a food e.g. chips are a lower GI than boiled potato.

Free sugars

Free sugars are any sugars added to food (e.g. biscuits, chocolate, cake) or sugars naturally present in honey, syrups and fruit juices. There is a lot of media and public interest in 'sugar' and the sugar debate can be very confusing as sugar can be found in many foods. Recent recommendations have suggested that it is important to be aware of 'free sugars' and to limit our intake of these. It is recommended that adults consume no more than 30g free sugar (approximately 7 teaspoons) per day. Make sure to be label aware as some carbohydrate foods (particularly processed items such as ready meals) can contain high levels of free sugars.

Where are free sugars found?

Table sugar, syrup, treacles, honeys, coconut sugar and fruit juice are all examples of free sugars

What does not count as free sugar?

Natural sugars found in milk, fruit and vegetables.

Summary

Foods that contain carbohydrates are an important part of our diets and should be included in as part of a healthy balanced, diet. It is helpful to choose wholegrain 'starchy' carbohydrates as they contain additional important 'nutrients' for the body. As with any food, it is important to choose the correct portion to suit your needs. It's useful to be aware that 'free sugars' often provide lots of energy with very little nutritional value so these should be consumed in moderation.

Further information

Food Fact Sheets on other topics including Diabetes, Sugar, Glycaemic Index, Wholegrains, Food and Mood and Healthy Eating can be downloaded at www.bda.uk.com/foodfacts



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The information sources used to develop this fact sheet are available at www.bda.uk.com/foodfacts

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