

Carbohydrates

Published by Bupa's health information team, healthinfo@bupa.com, April 2008

Sugary and starchy foods, such as milk and rice, are an important part of your diet. They provide you with essential vitamins, minerals and fibre, and are a vital source of energy for your body in the form of carbohydrates. There are two types of carbohydrates - simple and complex.

What are simple carbohydrates?

Some simple carbohydrates, such as glucose, are made up of a single sugar molecule. Others consist of two sugar molecules joined together. For example sucrose, which you may add to your tea and coffee, is a combination of glucose and fructose.

The simpler a carbohydrate is, the quicker it's absorbed into your blood stream. That's why athletes sometimes have a glucose drink when they need a rapid burst of energy. The problem with these rapid rises in blood sugar is that they tend to be followed by a rapid drop, which can leave you feeling dizzy, weak and hungry.

Many simple carbohydrates (also known as sugars) are bad for your teeth. The foods they are found in, such as cakes and biscuits, often contain a lot of fat as well, which can contribute to obesity. You can choose foods that are low in sugars by looking at food labels. Low sugar foods contain 5 grams (g) of sugars or less per 100g, high sugar foods contain 15g of sugars or more per 100g. Foods between these two amounts are of medium sugar content.

The exception to this is the sugars found in milk, fruit and vegetables (lactose and fructose). Your body doesn't process (metabolise) these sugars quickly because the foods that contain them also contain other substances that slow the process down. For example, the fructose in fruit is released more slowly because much of it is contained within the cell walls of the fruit. The fructose is only released once your digestive system has broken down the fruit.

What are complex carbohydrates?

Complex (or starchy) carbohydrates are made up of lots of sugar molecules joined together. Because the molecules are more complex, it takes your digestive system longer to break them down. This means that the sugars are released more slowly into your bloodstream keeping your blood sugar level more constant, without sharp increases or decreases.

When starchy carbohydrates are broken down in your body, one of the main end-products is glucose. Glucose is an important source of energy for your muscles and other vital tissues and organs, including your brain and nervous system. By eating starchy foods regularly throughout the day, your energy levels will be maintained. Good sources include bread, oats, pasta, cereals, potatoes, yams, beans, lentils, noodles, rice and couscous.

The Food Standards Agency recommends that starchy foods make up roughly one third of your diet because they are so important to your health. The easiest way to make sure you are getting enough of these is to base your main meals around them. For example, you could have cereal or toast for breakfast, a jacket potato or rice salad for lunch, and a plate of pasta with salad, or perhaps some noodles with prawns and stir-fry vegetables, for supper.

What's the difference between refined and unrefined carbohydrates?

Most of the complex carbohydrates in our diet come from grains such as wheat, rice and oats. In refined foods, such as white bread, white rice, pasta and noodles, most of the fibre has been removed along with some of the nutrients. In unrefined carbohydrates, the grain has simply been ground, cracked or flaked to make it edible. This wholegrain food contains exactly the same amount of fibre and nutrients that occur naturally in the grain. And because your body digests them more slowly, wholegrain foods have the added advantage of making you feel full for longer.

According to MRC Human Nutrition Research, nine out of 10 UK adults do not eat enough wholegrains, which means that many of us miss out on fibre and essential nutrients. The British Nutrition Foundation recommends that an adult should eat at least 18g of fibre per day; but many people only eat 12g on average per day.

A few simple ways to boost your intake of wholegrains include:

- buying wholegrain breads, biscuits and crackers
- choosing wholegrain breakfast cereals
- switching to brown rice and pasta
- using wholewheat pittas and pizza bases
- baking with wholewheat flour rather than white

Is a low-carbohydrate diet healthy?

Some diet books claim that eating fewer carbohydrates and more protein can help you to lose weight. But according to the Food Standards Agency, it can be bad for your health if you cut out starchy foods because you could miss out on fibre and important nutrients. High-protein diets also tend to be higher in saturated fat, which could increase your risk of heart disease.

What is the difference between low-GI and high-GI carbohydrates?

The glycaemic index (GI) is a way of classifying carbohydrates according to their effect on your blood sugar level. Starchy foods with a high GI, such as floury potatoes, white rice and white bread cause a sharp rise in your blood sugar level. Foods with a low GI, such as porridge oats, pulses and new potatoes cause a slower rise. Some diet books recommend eating more low-GI foods as a way to control your weight but, according to MRC Human Nutrition Research, there is no evidence that this actually works. However, there is evidence that a low-GI diet can help to lower your risk of type 2 diabetes and heart disease.

Further information

Food Standards Agency
www.eatwell.gov.uk

British Nutrition Foundation
020 7404 6504
www.nutrition.org.uk