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For a lot of people, carbohydrates make up the large majority of their diet, without knowing much about them. They are often cheap, convenient and tasty and always readily available, but can reek havoc when trying to control body weight and lose excess body fat. It's not the consumption of carbohydrates that is the problem, it's the type of carbohydrate that really affects results.

What are carbohydrates?

Carbohydrates are a combination of starch, sugars and fibre that when broken down provide energy for the body. They are primarily used as a fuel source and they provide us with the energy our brains and bodies need to function.

Most of the carbohydrates in the foods you eat are digested and broken down into glucose before entering the bloodstream. Glucose in the blood is taken up into your body's cells and used to produce a fuel molecule called adenosine triphosphate (ATP) through a series of complex processes known as cellular respiration. Cells can then use ATP to power a variety of metabolic tasks.
Most cells in the body can produce ATP from several sources, including dietary carbohydrates and fats. But if you are consuming a diet with a mix of these nutrients, most of your body's cells will prefer to use carbohydrates as their primary energy source

There are two types of carbohydrates – simple and complex.

Simple carbohydrates are made up of one or two sugar molecules linked together and are therefore broken down quickly by your body. Honey (fructose and glucose), table sugar (sucrose) and milk (lactose) all contain simple carbohydrates. These are broken down quickly by the body and create a spike in blood sugar level.

Complex carbohydrates are made up of larger molecules, meaning that it takes longer for your body to digest and absorb them. They often contain a lot of fibre and are lower in simple sugars. As it takes longer for the body to break down complex carbohydrates , energy gets released at a slower rate and causes less of a spike in blood sugar level.

Complex carbohydrates often contain a lot more nutrients than simple carbohydrates and should be the choice of carbohydrate in our diets.

For dietary purposes both simple and complex carbohydrates are broken down into different categories:

- **Sugars**
  - Intrinsic sugars - these incorporated into the cellular structure of foods, e.g. sugars in whole fruits and vegetables.
  - Extrinsic sugars - there are not bound into a cellular structure, e.g. the lactose (milk sugar) in dairy products. Other examples include: fruit juices, granulated sugar and confectionery.

- **Complex carbohydrates**
  - Starch – can be found in potatoes, bread, rice and pasta.
  - Dietary fibre – these are carbohydrate polymers with three or more monomeric units. These polymers are neither digested nor absorbed in the small intestine, but are important for gut health.

One gram of carbohydrate in the form of starch or sugars provides 3.75kcal of energy (this gets rounded up to 4kcal/1g). The body's tissues require a constant supply of glucose, which is used as a fuel. The main source of glucose is dietary carbohydrate. Glucose can also be synthesised from protein. If the diet is low in carbohydrate, a greater percentage of dietary protein is used to provide glucose. However this results in less protein being available for the growth and repair of body tissues, hence the importance of carbohydrates when trying to build muscle.

If your body has enough glucose to fulfil its current needs, excess glucose can be stored for later use. This stored form of glucose is called glycogen and is primarily found in the liver and muscle. The liver contains approximately 100 grams of glycogen. These stored glucose molecules can be released into the blood to provide energy throughout the body and help maintain normal blood sugar levels between meals.

Carbohydrates are important for your body – you just need to make sure you are the correct type and quantity.

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