The Glycaemic Index

More and more people are recognising the value of the Glycaemic Index, or GI, in choosing carbohydrate-rich food. This article aims to provide a basic insight into why it exists and its relevance in a healthier diet.

Why carbs?

The reason we eat carbohydrate-rich food, such as potatoes, rice, oats, bread etc, is essentially to extract a substance called glucose. It can be said that glucose is carbohydrate in its simplest form, and is the body's main source of fuel. To extract and utilize this glucose, however, the carbohydrate must first be broken down by the digestive system. The process by which this happens is not a simple one, but results in the glucose being fed into the blood stream to be used as fuel or stored for later use. Where each carbohydrate differs, though, is how quickly the glucose can be extracted by the body and transported into the blood stream to be used for fuel.

Why do we need a glycaemic index?

The glycaemic index, or GI, is a numerical ranking system that refers to how quickly a carbohydrate can be broken down into glucose (a form of sugar) by the body. The faster the carbohydrate is broken down the higher its glycaemic index.

Very high GI foods result in a dramatic increase in blood sugar levels, which you might experience as a sudden rush of energy immediately after eating them. This 'sugar rush' is often experienced after consuming sweets or fizzy drinks because the glucose in these products is easily accessible. Even savoury foods, such as white bread, can be high GI – try putting a small piece of white bread in your mouth without chewing. After a few seconds it will appear sugary, indicating the swift break-down of the carbohydrate into glucose (by the saliva).

If you tried the same with a piece of seeded granary bread it would not produce the same effect, or would certainly take a lot longer, because it has a lower glycaemic index so takes the body longer to extract the glucose than from the white bread.

Is low GI the best form of carbohydrate?

If the body needs glucose for energy, why should we slow down its extraction by consuming low GI, instead of high GI foods? Blood sugar levels are continuously regulated so that enough energy is available to cope with the demands made from the outside world. If too much glucose is fed into the blood stream at once (through high GI carbs) the excess glucose is converted into fat and stored. Low GI (slow energy releasing) carbs such as brown rice/pasta and porridge oats allow energy to be fed into the blood stream gradually to replace the energy used up in every day life. This way blood sugar levels remain fairly constant and fat storage will be kept to a minimum.

Effects on exercise

This is not to say high GI carbs don't have a place. Vigorous exercise places more demand for energy on the body than usual so will deplete the body's glucose supply at a faster rate. In this situation a small amount of high GI carbohydrate can be consumed immediately afterwards to replenish this supply and bring blood sugar levels back up to normal.

Summary

Low GI carbs suppress your appetite for longer and minimise fat storage so, in the context of losing weight, can be a very useful tool. High GI carbs are useful for replenishing energy supplies after a vigorous workout, but regular consumption outside an intensive exercise programme will encourage excess storage of fat.