

Food for thought – low GI cakes?

Cakes are popular as a post-exercise snack however much of the health-related press will suggest that they should be avoided in all circumstances. I did some baking for sale after a local race recently and a club runner asked me, with a wry smile, if I was going to make a low GI cake. Not surprisingly, I made a high GI, high calorie cake but his question made me think again about GI and what it all means.

When we eat a meal containing carbohydrate (carbs), the level of glucose in the bloodstream (our blood sugar level) increases. This stimulates the release of insulin. Insulin is a hormone which stimulates the uptake of glucose from the blood into cells, providing their fuel.

When we say carbs we generally think of bread, pasta, rice and, of course, cake. These are foods that are high in carbs however most foods contain some carbs; fruits and vegetables are good sources but carbs are also found in dairy products. All carbs are made up of sugar molecules in chains of varying lengths. The shorter the chains, the more quickly the carbs are broken down during digestion.

The Glycaemic Index (GI) is the measure of how quickly foods are broken down into glucose, the smallest sugar molecule, to provide energy to the body. The index is based on a value of 100 for glucose itself, with lowest values for foods that are digested more slowly.

Insulin has a pivotal role in controlling energy storage and retrieval in the body. It regulates blood sugar (glucose) levels and allows excess glucose to be stored as glycogen in the liver and muscles. Once those stores are full, excess glucose goes to form fat stores. Insulin also protects the body's fat stores; if we don't consume sufficient carbs to maintain blood sugar levels, glycogen stores are converted to glucose and only when those stores are low will body fat and protein be utilised as fuel.

When we eat high GI foods and suddenly raise our blood sugar levels, insulin levels also rise and they rapidly lower blood sugar. Low blood sugar stimulates the feeling of hunger and we're looking for another sugar fix within a couple of hours. Eating low GI foods, and therefore releasing sugars into the bloodstream more slowly, doesn't raise insulin levels as much. The combination of slower sugar release and lower insulin levels provides more consistent levels of energy (and mood) and makes us feel fuller for longer. Overall, we're much less likely to lay down additional fat stores.

The GI is a scale of 0 – 100, with glucose at 100. Low GI foods are rated at less than 55, but what governs GI? The GI of a specific food is affected by many things, including the types of fibre, fat and starch it contains and the size of the particles. Highly processed foods tend to have smaller particle size and higher GI values. The

picture is further complicated, however, as when foods are combined the overall GI of the meal is affected.

Low GI foods include almost all vegetables, beans and pulses (except broad beans – high GI, potatoes – med or high GI); apples, pears, grapes, berries and citrus fruit; dried pasta; brown, basmati and long grain rice; nuts; fish; lean meat; soy; tofu; milk and most yoghurts.

High GI foods include most dried and tinned fruits; tinned pasta; bagels and almost all breads; cornflakes and frosted cereals; many biscuits; cheese; cream; cereal bars; crisps; chips; chocolates; honey; sugar sweetened soft drinks and coffee.

The sage advice is to opt for low and medium GI foods in our diet in order to maintain steady blood sugar levels, and hence more steady energy levels. As runners, we will happily eat cake and other high GI foods in order to boost sugar levels quickly, but we're likely to need a 'proper meal' soon afterwards as our blood sugar levels drop.

Could I have made a low GI cake? Not really, but I could have lowered the GI to some extent by opting for a recipe using oats and less flour, berries and not chocolate and a sugar substitute such as sucralose. But, given that the 'customers' were going to be runners, I went for the full high GI version chocolate cake!

Mary Russell

Sports Nutritionist