

Family Friendly Factsheet

GI



What is GI?

GI stands for glycaemic index and is a method of classifying foods according to their effect on blood glucose levels. The more a food raises blood glucose levels, the higher it's GI value. Foods such as white bread and potatoes are classed as high GI foods and are therefore avoided when following a low GI diet and replaced by wholemeal alternatives or types of rice and potatoes with a lower GI.

What does this mean?

Foods with a high GI value are broken down quickly to release a burst of energy after consumption, rapidly raising blood sugar. This usually causes the secretion of insulin in order to regulate the amount of sugar present in the blood. The constant changes in blood sugar levels brought about by the consumption of high GI foods are thought have an effect on both satiety and mood, although these ideas are yet to be thoroughly researched and studied.

GI Classification

Typically, foods with low carbohydrate content such as meat, fish and eggs have a low GI. Most fruit and vegetables, milk, brown rice and pasta also have a low GI. Medium GI foods include wholewheat products, sweet potatoes and white rice, and high GI foods include white bread, watermelon and baked potatoes.

Limitations

The GI concept is complex and requires the use of comprehensive tables to calculate the GI content of the diet. More recent research has shown that the GI of a meal cannot be calculated accurately from the carbohydrate source alone, the protein, fat, amount of calories and also the amount of drink consumed with the meal must be considered. Also, as the amount of carbohydrate in a portion varies from food to food, this is taken

into account when measuring the total effect on blood sugar. This concept is known as glycaemic load (GL) and is calculated by multiplying the amount of carbohydrate in a portion by the GI of the food and dividing by 100. As a result, some foods which have a high GI could have a low GL simply because they contain a low amount of carbohydrate, for example watermelon and carrots.

How is GI calculated?

Usually, a group of 10 volunteers are given a sample of the food to be measured after an overnight fast. Their blood glucose level is then measured at 15 – 30 minute intervals over the next two hours; this is measured against pure glucose (which has a GI value of 100) in order to rank the food according to its effect on the blood sugar of the volunteer. The average of the 10 measurements is then taken and used as the GI value for that food.

GI and health

For diabetic patients, it is widely thought that low GI foods improve metabolic control and may have positive effects on the possibility of developing other cardiovascular risk factors. The current advice to diabetic patients is to replace foods with a high GI such as white bread with low GI foods such as legumes, oats and certain fruits. It is also thought that consuming low GI foods such as wholegrains could have a positive impact on the risk of developing cardiovascular disease and diabetes in non diabetic patients.

GI and weight loss

The GI theory suggests that high GI foods produce surges in blood sugar and insulin levels which cause a sensation of hunger and lead to excessive calorie intake. Although there is no scientific evidence that low GI foods are preferable to foods with a high GI, it is not thought that following a low GI diet will have an adverse effect on health.