

THE GLYCAEMIC INDEX

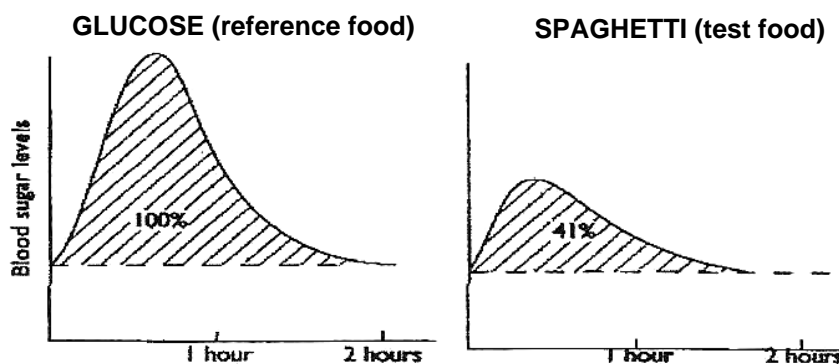
What is the Glycaemic Index (GI)?

The Glycaemic Index (GI) is a ranking of carbohydrate foods from 1-100 that tells us whether a food will raise blood glucose levels dramatically, moderately, or just a little. Carbohydrate foods are those that largely contain starches and sugars – eg cereals, grains, starchy vegetables (potato, sweet potato and corn) bread, fruit, milk and yoghurt.

How is GI measured?

GI is derived from measuring the blood glucose levels in people after they have eaten an amount of food that contains 50g of carbohydrate (starches and sugar). Different foods contain different amounts of carbohydrates – eg 50g of carbohydrate equals 6 cups of boiled carrots or 3 boiled potatoes or 2 cups of pasta.

Carbohydrate foods that **break down slowly** release glucose gradually into the blood stream and have a **low GI**. Carbohydrate foods that **break down quickly** produce a faster and higher rise in blood glucose levels and have a **high GI**. The chart below compares the GI between glucose and spaghetti.



Pure glucose produces the fastest and highest rise in blood glucose levels. This is why glucose is given a GI of 100 (or 100%) and is used as a reference for measuring against all other foods. Spaghetti (as shown) raises blood glucose levels only 41% as much as glucose, so it has a GI of 41.

Why is GI important?

There is a relationship between GI and diabetes. **High GI foods** may result in the body requiring more of the hormone insulin to be produced (or injected for those people requiring insulin) to control blood glucose levels. **Low GI foods** may help control established diabetes as they can produce lower blood glucose levels. Low GI foods can also promote some weight loss by making you feel more full and assisting in appetite control.

Food is not 'good' or 'bad' only on the basis of its GI. You should also consider:

- the fat content of foods (eg potato chips and chocolate have a low GI but are high in fat)
- eating a large range of foods, such as breads and cereals, fruit and vegetables, which are high in fibre, vitamins and minerals
- the amount of food that you eat.

Try to incorporate GI into your meals

Try to include at least one low GI food at each meal. Studies show that when a high GI food is combined with a low GI food, the complete meal results in having a moderate GI.

Further reading: Foster-Powell K, Brand Miller J & Colagiuri S (2003) *The New Glucose Revolution – People with diabetes*. www.glycaemicindex.com

Factors that influence the GI of food:

- type of starch present – eg the type of starch in Basmati rice is digested slower than other rices
- the physical form of the food – eg particle size, ripeness (the larger the particle size the more slowly the food is absorbed and the riper the fruit the more quickly it is absorbed)
- the amount of cooking or processing (more cooking / processing usually speeds up absorption)
- amount of water-soluble fibre present (slows down absorption)
- the type of sugar (fruit sugar is more slowly broken down than sucrose)
- fat and protein content (fat and protein usually delay absorption)
- the acidity of food – eg adding lemon juice or vinegar to food, delays absorption.

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GI of various foods

Low GI (54 or less)	Moderate GI (55-69)	High GI (70-100)
<p>Breakfast Cereals Rice bran & oat bran, All-Bran (all varieties), Guardian, Special K**, porridge</p> <p>Breads & cereals Whole grain / multi grain breads, fruit loaf, pearl barley, spaghetti / macaroni, instant noodles (low fat), cracked wheat (Bulgur), buckwheat, rice noodles</p> <p>Vegetables Sweet corn, sweet potato</p> <p>Legumes & Pulses Lentils, kidney beans, split peas, chick peas, baked beans</p> <p>Dairy Products Yoghurt, milk, custard (choose low fat varieties)</p> <p>Fruit Cherries, grapefruit, dried apricots & apples, pears, apples, plums, peaches, oranges, grapes, banana (average), prunes, mango</p> <p>Spreads 100% fruit jam</p> <p>Juices Fruit juices** (apple, orange, pineapple, grapefruit)</p>	<p>Breakfast Cereals Sustain, semolina, Weet-Bix / Vita Brits, Just Right, natural muesli, plain Mini Wheats</p> <p>Breads & Cereals Couscous, rye & light rye bread, wholemeal bread, pita bread, crumpet, croissant*, Basmati or Doongara rice</p> <p>Biscuits Jatz biscuits*, Ryvita crispbread, Digestive biscuits, Shredded Wheatmeal, Milk Arrowroot biscuits</p> <p>Fruit Sultanas, pineapple, rockmelon, apricots, kiwi fruit</p> <p>Sugars Sugar (sucrose)</p>	<p>Breakfast Cereals Puffed wheat, Rice Bubbles, Sultana Bran, Bran Flakes, Corn Flakes, Coco Pops, Mini Wheats (fruit filled)</p> <p>Breads & Cereals White bread, dark rye bread, English muffin, bagel, baguette, rice cakes, tapioca, jasmine rice</p> <p>Vegetables Potatoes Broad beans</p> <p>Biscuits Water crackers, Sao*</p> <p>Fruit Watermelon, dates dried, lychee (canned)</p> <p>Snack Foods Pretzels</p> <p>Drinks Sports drinks (Gatorade), Lucozade</p> <p>Sugars Malt (maltose), glucose, Jelly beans</p>

* These are foods high in fat. Use them occasionally.

** These foods are low in fibre. Use them occasionally.



The GI Symbol can be found on certain food packages. Similar to the Heart Foundation Tick program, the GI symbol is part of a licensing program where manufacturers pay for its display.

When you see the GI symbol, it means that an approved GI testing facility has tested the food for its glycaemic index.

However, the symbol itself does not indicate whether the food has a high, medium or low GI

The actual GI value and its meaning will appear near the symbol or nutrition panel. It is therefore up to you to look for the actual GI value on the label.

Although the GI symbol may be a useful tool, it should be used in conjunction with the actual GI value and with consideration of other nutritional factors.

(See leaflet in this series about label reading).