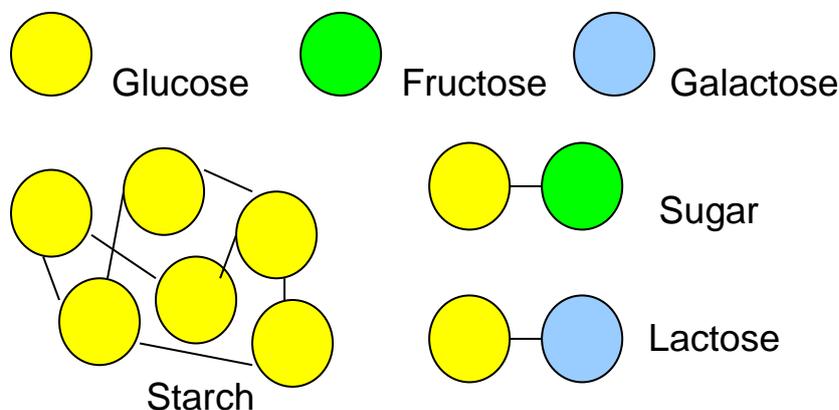


The Glycaemic Index and slowly absorbed carbohydrate foods

All foods containing carbohydrates, including starchy and sugary foods, are broken down into glucose, the simplest form of carbohydrate. Glucose is absorbed into the blood stream and provides fuel for all of the cells in the human body.

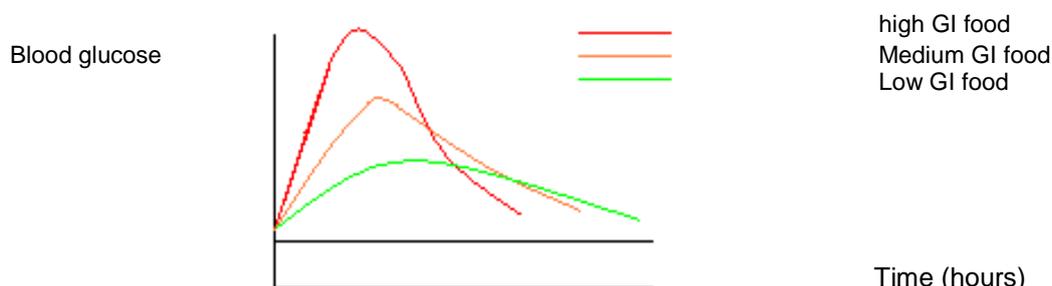
Starchy foods are made up of long and interlinked chains of glucose molecules (units) joined together like beads in a necklace. Different starchy foods have different physical properties and are broken down and absorbed as glucose into the blood stream at different rates.

Likewise with sugary foods, some breakdown quickly into glucose, others take longer to breakdown. Glucose doesn't need any breaking down and is quickly absorbed into the blood stream, causing blood glucose to rise rapidly. Fructose (fruit sugar) is absorbed more slowly into the blood stream, and then travels to the liver to be converted into glucose. Sucrose (table sugar) is made up of a glucose and fructose (fruit sugar) unit joined together. Sucrose first needs to be broken down into glucose and fructose before glucose and fructose can be absorbed into the blood stream, and therefore takes longer to be absorbed into the blood stream than glucose. Lactose (milk sugar) is made up of a glucose and galactose unit joined together, and like sucrose, is broken down and absorbed slowly into the bloodstream.



What is the Glycaemic Index?

Carbohydrate foods have been tested for their effect on blood glucose levels and categorized according to how quickly they break down and glucose is released into the bloodstream. This is known as the glycaemic index, or GI.



High GI foods are broken down quickly into glucose and cause blood glucose levels to rise very rapidly. Eating too many high GI foods may create cravings for more food soon after eating, which can trigger over-eating and weight gain.

Low GI foods are broken down slowly into glucose and cause a slower rise in blood glucose levels after eating. Stable blood glucose levels can help reduce food cravings between meals, help control weight, improve insulin sensitivity and blood glucose levels in people with type 2 diabetes and those with impaired glucose tolerance. Choosing lower GI foods may also help you to lower your blood cholesterol and triglyceride levels (blood fats) and reduce your risk of heart disease.

<p>High GI foods</p>	<p>Cornflakes, Rice Krispies, Cheerios, Crunchy Nut Cornflakes, Coco Pops, Sugar Puffs and Puffed Wheat White, ordinary wholemeal and gluten-free bread, French bread, bagels and crumpets, Old potatoes (boiled, baked or mashed potato), instant mashed potato and potato chips, short grain white and brown rice Water biscuits, cream crackers, rice cakes and corn crisp breads Lucozade, sports drinks, glucose tablets and gels, Jelly Babies, ordinary Coca Col and lemonade</p>
<p>Medium GI foods</p>	<p>Weetabix, Shredded Wheat, Special K, Fruit and Fibre, Branflakes and instant porridge (e.g. Ready Brek and Oats So Simple) Granary, wholegrain, pitta, seeded and stoneground wholemeal breads New potatoes, sweet potatoes and yams Basmati rice, long grain brown rice, cous cous, gnocchi and pastry Tortilla wraps, taco shells, tortilla corn crisps, Pancakes, croissants, malt fruit loaf, Digestive, oatmeal and tea biscuits, potato crisps, wholemeal crackers, rye crackers and oatcakes Bananas, pineapple, fresh apricots, tinned fruit (e.g. peaches, fruit cocktail, etc.) and dried fruit (e.g. raisins, sultanas, dried apricots, etc.) Table sugar, golden syrup and treacle</p>
<p>Low GI goods</p>	<p>Muesli, raw porridge oats, All-Bran, Oatibix, Sultana Bran Rye and pumpernickel bread, chappatis, Pizza bread, wild rice, pasta and noodles (all types, fresh or dried) Cow's milk (all types),soya milk, yoghurt and fromage frais All vegetables and pulses (e.g. lentils, peas, beans and baked beans) Nuts, plain popcorn, chocolate, custard, ice-cream Apples, oranges, pears, plums, green grapes and fruit juice Jam, marmalade, honey and fructose (fruit sugar)</p>

Can I eat as much low GI carbohydrate foods as I like if I have diabetes?

You still need to be careful about the amount of carbohydrate that you eat. Although low GI carbohydrate foods breakdown and release glucose slowly, eating too much carbohydrate in one go will cause your glucose level to rise too much. Some low GI foods are also high in fat and calories (e.g. chocolate, ice cream, nuts, etc.), so should only be eaten occasionally and in small amounts, as part of a healthy diet. A healthy way of eating is to incorporate a range of lower GI carbohydrate foods that are also low in fat, salt sugar and calories (energy).

Can following a low GI diet help me to lose weight?

There is some research to suggest that following a low GI diet may help to control appetite. However following a low GI diet is not a 'magic bullet' for weight loss and will only help you to lose weight if it is followed as part of a calorie-controlled diet, combined with regular physical activity.

How can I lower the GI effect of a meal?

When we eat a meal we tend to eat a mixture of foods containing carbohydrate. If you mix a low GI food with a high GI food then it will slow down the breakdown and release of glucose from the high GI food, so that the overall GI effect of the meal is lower. For example:

**High GI food (e.g. baked potato) + low GI food (e.g. baked beans)
= medium GI effect**

Can I eat high GI foods?

Foods with a high GI are not necessarily unhealthy foods. For example a baked potato has a higher GI than potato crisps. However a baked potato is a healthier food choice than potato crisps, which are high in calories (energy), fat and salt.

When might high GI foods be needed?

Studies have shown that the best foods to treat hypoglycaemia (low blood glucose) are those with a very high GI which need little or no digestion, and which are absorbed rapidly into the bloodstream (e.g. Lucozade Energy, ordinary Coca Cola and lemonade, glucose tablets and gels, Jelly babies, etc.). Foods like chocolate, milk, biscuits, cake and fruit are not suitable for treating hypoglycaemia, as they have a lower GI and do not work quickly enough to raise blood glucose levels.

More information / advice

For more information or advice about following a low GI diet, please ask your doctor or diabetes nurse to refer you to a registered dietitian.

This leaflet was originally written and produced by the North and West Wiltshire Community Dietitians, Great Western Hospitals NHS Foundation Trust, and has been adapted for use by the Salisbury Diabetes Team, with their permission.

For further advice and information please contact:
Lynne Greenhalgh, Diabetes Specialist Dietitian
Diabetes Nursing Service (Salisbury team)
Diabetes Education Centre, Salisbury District Hospital, SP2 8BJ
01722 425176