

# The Glycaemic Index (GI)

This booklet is designed to help you understand what the glycaemic index of food means and which foods have a high or low GI

**This booklet was given to you by:**

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*Our Values*

**Service Teamwork Ambition Respect**

## Introduction

The Glycaemic Index (G.I.) is a term used to describe the effects that different foods containing carbohydrate have on blood sugar levels.

“**Carbohydrates**” consist of sugars (e.g. sweets and chocolates) and starches (e.g. bread and potatoes). These are foods that our body can digest into “**glucose**”, the simplest form of carbohydrate, which is the No. 1 fuel for the cells in our body. As glucose is the simplest form of carbohydrate, it does not require any further digestion, and is absorbed into the blood from the gut very quickly.

The G.I. enables us to rank foods on a scale of 0 – 100 according to their effects on our blood sugars.

The effect that different carbohydrate containing foods have on blood sugar levels are compared with the effect that **glucose** has. In order to obtain a G.I. for a food, blood sugars are measured after the carbohydrate food is eaten, and compared with blood sugars after a reference food is eaten, which is usually pure glucose.

## Measuring the GI of Foods

- Carbohydrate foods that break down very quickly during digestion, releasing glucose very rapidly into the blood stream have the highest G.I. e.g. the G.I. of cornflakes is 84.
- Carbohydrate foods that break down slowly during digestion, releasing glucose gradually into the bloodstream have a low G.I. e.g. the G.I. of porridge is 42.

## Health Benefits of Low GI Foods

- Low G.I. diets can help to stabilise blood sugar levels in people with diabetes.
- Low G.I. diets can help people to lose weight.
- Low G.I. diets can help to lower blood cholesterol levels.

“ADDING LOW G.I. INGREDIENTS TO RECIPES AND MEALS REDUCES THE OVERALL G.I. OF THAT FOOD OR DISH”.

$$\begin{array}{rcccl} \text{e.g.} & \text{High G.I. Food} & + & \text{Low G.I. Food} & \frac{84 + 32}{2} & \text{Intermediate} \\ & & & & & \text{G.I. Meal} \\ & & & & & \\ & \text{Cornflakes} & & \text{Skimmed Milk} & & = \text{G.I. of 58} \\ & (\text{G.I. 84}) & & (\text{G.I. 32}) & & \end{array}$$

Try introducing a low G.I. food at 2 different meals in the day.

## Suggestions for Meals and Snacks

### Breakfast

- Fruit or fruit juice: apples, pears, grapefruit, pineapple or dried fruit e.g. apricots
- +/- All bran, muesli, porridge, sultana bran, special K
- +/- Wholegrain, granary, rye or oat bread/toast

### Light meal

- Pasta salad with ham, tuna, chicken or a sprinkling of low fat grated cheese
- Sandwiches made from breads, as above, with a low fat filling e.g. lean meat, chicken, salmon, tuna, egg or egg and salad
- Pitta bread stuffed with hummus (chicken pea puree) and salad or low fat pate and tomato or cucumber
- Vegetable or bean soup with bread as above
- Baked beans on toast (made with bread, as above)
- Fresh fruit/diet yoghurt

### Main meal

- Lean meat / chicken / fish / meat substitute / lentils or beans / nuts
- + pasta / noodles / basmati rice / sweet potato / yam
- + unlimited vegetables or salad
- + Fresh/tinned fruit/fruit crumble made with oats / baked apple / banana / diet yoghurt

## Snack ideas

You may not need to snack between meals, especially if you are trying to lose weight. If you do however, some suggestions for low G.I. snacks are outlined below:

- Fresh fruit: apples, plums, pears, peaches
- Small handful of dried fruit e.g. apricots, prunes
- Fruit loaf
- Diet yoghurt
- Toast made with wholegrain/rye/oat bread/granary bread
- Bowl of low G.I. cereal (see overleaf)
- Fruit smoothie (glass of milk blended with fruit and natural yoghurt)
- Muffin
- Flapjack
- Popcorn
- Oatcakes/oatmeal biscuits
- Glass of milk

**Keep foods containing relatively high amounts of fat to a minimum**

## The Glycaemic Index of Foods

	<b>LOW GI (Less than 55)</b>	<b>INTERMEDIATE GI (55 – 70)</b>	<b>HIGH GI (more than 70)</b>
<b>Drinks</b>	Sugar-free drinks	Sports drinks Fanta, cola	Lucozade Glucose drinks
<b>Cereals</b>	All Bran Muesli Porridge Special K Sultana Bran Fruit & Fibre-type Oat and Wheat Flakes	Shreddies Sustain Grapenuts Cheerios Branbuds Weetabix Shredded Wheat	Cornflakes Cocopops Rice Krispies Puffed Rice Puffed Wheat Grape Nuts
<b>Bread, biscuits, cakes</b>	Heavy grain bread e.g. Granary/multigrain Pitta bread Rye bread Chapatis Fruit loaf Sponge cake* Banana cake* Rich Tea biscuits	Fibre enriched white bread Ryvita Oat meal biscuits Shortbread* Muesli bar with fruit* Flapjack* Croissant*, Muffin, Crumpet Digestive biscuits Flaky pastry Taco Shells Pizza (Cheese & Tomato)	Brown Wholemeal / White French stick Bagels Morning coffee biscuits Water biscuits Puffed crispbreads Rice cakes Vanilla Wafer biscuits
<b>Potatoes, rice, pasta</b>	Yam Sweet potatoes Basmati rice Noodles Pasta – most types	New potatoes Boiled potatoes Macaroni Gnocchi	Instant potato Mashed potato Jacket potatoes, chips* Instant rice Brown rice, White rice Waffles

<b>Fruit and vegetables</b>	Apple, dried apricots, banana, cherries, Cantaloupe melon, grapefruit, grapes, kiwi, mango, orange, peach (canned and fresh), pear, plum, fruit cocktail. Apple juice, orange juice, grapefruit juice, pineapple juice (small glass). Carrots, peas, sweetcorn	Apricots (canned) Pineapple Papaya Cantaloupe melon Squash Sultanas and raisins Pineapple Beetroot (canned)	Parsnips Pumpkin Swede Broad Beans Watermelon Lychee (canned)
<b>Legumes and grains</b>	Baked beans, butter beans, black eyed beans, chick peas, haricot beans, kidney beans, lentils, soya beans. Pearl barley, buckwheat, bulgar wheat Semolina (cooked)	Couscous Cornmeal Millet	Tapioca
<b>Snacks</b>	Most chocolate* Popcorn, crisps* Peanuts*	Some chocolate bars* e.g. Mars bars Taco Shells	Jelly babies / beans Corn chips Pretzels
<b>Sugars</b>	Fructose, Lactose	Honey, Sucrose	Glucose
<b>Dairy</b>	Low-fat ice cream, Milk, Yoghurt Custard	Full-fat ice-cream*	

## Other factors that Affect the GI of Foods

Factor	Mechanism	Examples
Condition of the food	The less “swollen” the starch, the slower the rate of digestion	Spaghetti Porridge
Physical form of food	The fibrous coat around beans and seeds act as a barrier to digestion	Rye bread, beans and lentils
The type of starch in foods	The more amylase a food contains, the slower the rate of digestion	Basmati rice
Type of fibre	Viscous, soluble fibres slow down the rate of digestion	Rolled oats, rye and barley breads, beans and lentils



Protein-starch and fat-starch interactions	The interactions of protein and fat with starch, can slow down the rate of digestion	Legumes, pasta
Anti-nutrients	Some foods contain substances that inhibit the digestion of starch	Soya beans Yams

## Ensuring a Healthy Balanced Diet

A healthy nutritionally balanced diet remains most important dietary goal.

The inclusion of low G.I. foods in the diet is an **extra tool** which can be used to:-

- Help stabilise blood sugar levels in people with diabetes.
- Help to achieve or maintain a healthy weight.
- Help lower blood cholesterol levels and thereby reduce the risk of heart disease.

### **SUGGESTED FURTHER READING:**

- The New Glucose Revolution.  
Publisher: Hodder and Stoughton
- Pocket Guide To The Glucose Revolution For People With Diabetes.  
Publisher: Hodder and Stoughton

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