

Guide to a
GYCEMIC INDEX
for
LIFESTYLE

GLYCEMIC INDEX

What is the Glycemic Index?

The glycemic index (or GI) is a ranking of carbohydrates on a scale from 0 to 100 according to the extent to which they raise blood sugar (glucose) levels after eating. Foods with a high GI are those which are rapidly digested, absorbed and metabolised and result in marked fluctuations in blood sugar (glucose) levels. Low GI carbohydrates – the ones that produce smaller fluctuations in your blood glucose and insulin levels – is one of the secrets to long-term health, reducing your risk of type 2 diabetes and heart disease. It is also one of the keys to maintaining weight loss. Here is the evidence.

For diabetes: All of the evidence based recommendations for the management of diabetes from the major diabetes organisations around the world (the American Diabetes Association; Canadian Diabetes Association and Diabetes UK for example) now advise people with type 1 and type 2 diabetes to use the GI or GL as part of the nutritional management of their condition.

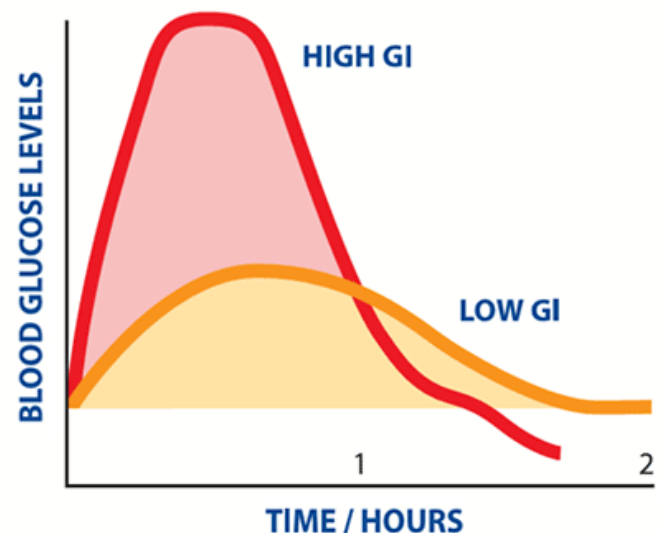
For gestational diabetes: In their recently released guidelines, Initiative on gestational diabetes mellitus: A pragmatic guide for diagnosis, management, and care, the International Federation of Gynecology and Obstetrics have recently recommended a focus on lower GI foods. “Low GI diets are associated with less frequent insulin use and lower birth weight than in control diets, suggesting that it is the most appropriate dietary intervention to be prescribed to patients with GDM,” they say.

For cholesterol: An analysis of 28 randomised controlled trials provided high-level evidence that high-fibre, low GI diets can significantly reduce total and LDL cholesterol levels, independent of weight loss.

For weight maintenance: The Diogenes study from Europe found that a moderately high protein low GI diet is the best for longer-term weight management.

What affects the GI value?

Several factors influence how fast a particular carbohydrate food raises blood glucose levels. These factors include: the chemical and physical structure of the carbohydrate-food in question, how refined the carbohydrate is, how the carbohydrate is cooked and also the presence of other



The amount of carbohydrate in the reference and test food must be the same.

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substances which reduce either the potency of the body's digestive enzymes, or the speed of digestion.

How Refined is the Carbohydrate

One of the most important factors that determine the GI of carbohydrate foods is how refined or processed the carbohydrates are. In general, refined or processed carbohydrates have had most of their 'natural' fibre removed. The carbohydrate becomes incapable of resisting the digestive enzymes and is therefore rapidly metabolized into glucose.

Chemical Structure of the Carbohydrate

The body processes glucose very efficiently. (The GI of glucose is 100.) But the body cannot easily metabolize fructose, a common monosaccharide in fruits, which is why fructose has a low GI of 23. Ordinary table sugar (sucrose), is a disaccharide made up of one molecule of glucose linked to one of fructose.

Hence the glycemic index of table sugar is 65, midway between 23 and 100 in the medium-glycemic-index range

Physical Structure of the Carbohydrate

The physical structure of the carbohydrate also affects the GI value. For example, most breads are in the high GI range – not due to the chemical nature of wheat starch, but for two physical reasons:

- (1) The fine particle size of wheat flour gives digestive enzymes greater surface area to attack and metabolize the bread.
- (2) The surface area of bread is also increased by its puffed-out, fluffy structure, particularly in white bread. This results in GI of white bread being significantly raised by these structural attributes.

How Carbohydrates are Cooked or Prepared

Pasta has a glycemic index value of 40-50. This can be further reduced by cooking it less (al dente).

This is because al dente pasta resists the effect of digestive enzymes and has a lower GI. However, cooking pasta for longer accelerates starch gelatinisation, increasing the GI.

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Fibre Slows Down Metabolism of Carbohydrates and Their Digestion

Fibre (either in the carbohydrate itself or in the stomach) protects the starchy carbohydrate from rapid attack by digestive enzymes, or slows digestion in the digestive tract. Either of these consequences will slow down the conversion of the carbohydrate to glucose.

Fat and/or Acid Slows Down Metabolism of Carbs and Their Digestion

The more fat or acid a carbohydrate food contains, (or, the more fat or acid in the stomach, during digestion) the slower the carbohydrate food is converted to glucose and absorbed into the bloodstream. The presence of fat and/or acid retards the emptying of the stomach. For example: adding vinegar, lemon juice, pickles, will help to lower the GI of a meal. Fermenting foods or the sourdough method of baking bread also lower the GI.

A low glycemic diet will not only help to improve your blood sugar control, it can also help:

- Eliminate dramatic mood swings
- Make you feel more energetic
- Produce an even flow of energy throughout the day
- Make you feel calmer
- Cause you to feel fuller longer
- Lose weight
- Improve your cholesterol levels

 Low GI (0-55)
 Moderate GI (56-69)
 High GI (70 or more)

BEANS

Baked		44
Black Beans, Boiled		30
Butter, Boiled		33
Cannellini Beans		31
Garbano, Boiled		34
Kidney, Boiled		29

Kidney, Canned		52
Lentils, Green, Brown		30
Lima, Boiled		32
Navy Beans		38
Pinto, Boiled		39
Red Lentils, Boiled		27
Soy, Boiled		16

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BREADS

Bagel, Plain		72
Baguette		95
Croissant		67
Dark Rye		76
Hamburger Bun		61
Apple Muffin		44
Cinamon Muffin		44
Blueberry Muffin		59
Oat & Raisin Muffin		54
Pita		57
Pizza, Cheese		60
Pumperickel		49
Sourdough		54
Rye		64

CREAL GRAINS

Barley		25
Basmati White Rice		58
Bulgar		48
Couscous		65
Cornmeal		68
Millet		71

Drinks

Apple Juice		40
Colas		65
Grapefruit Juice		48
Orange Juice		46
Pineapple Juice		46
Gatorade (1 Cup)		78
Cranberry Juice Cocktail		52
Tomato Juice		37

CERALS

All Bran		51
Bran Buds		45
Bran Flakes		74
Cheerios		74
Corn Chex		83
Cornflakes		83
Cream Of Wheat		66
Frosted Flakes		55
Grapenuts		67
Life		66
Muesli, Natural		54
Nutri-grain		66
Oatmeal		48
Puffed Wheat		67
Rasin Bran		73
Rice Chex		89
Shredded Wheat		67

CRACKERS

Graham		74
Rice Cakes		80
Rye		68
Soda		72
Wheat Thins		67
Pretzels		83
Water Crakers (5)		78
Saltines (3)		74
Corn Chips		71
Pocorn (2 Cups)		55
Potato Chips		51
Peanuts		10

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BREADS

Apple		38
Apricots		57
Apricotr Dried		35
Banana		56
Cantalope		65
Cherries		22
Dates		103
Figs, Dried (3)		61
Figs		35
Grapefruit		25
Grapes		46
Kiwi		52
Mango		55
Orange		43
Papaya		58
Peach		42
Pear		58
Pineapple		66
Plums		39
Prunes		15
Raisins		65
Staw Berries		32
Watermelon		72

Milk PRODUCTS

Chocolate Milk		35
Custard		43
Ice Cream, Van		60
Ice Milk, Van		50
Skim Mlik		32
Soy Milk		31
Tofu Frozen Dessert		115
Whole Milk		30
Yoghurt, Fruit		36
Yoghurt, Plain		14

SOUPS/VEGETABLES

Beets, Canned		64
Black Bean Soup		64
Carrots, Fresh, Boil		49
Corn, Sweet		56
Green Pea, Soup		66
Green Pea, Frozen		47
Lima Beans, Frozen		32
Parsnips		97
Peas, Fresh, Boil		48
Split Pea Soup W/ham		66
Tomato Soup		38

SOUPS/VEGETABLES

Chocolate Bar		49
Corn Chips		72
Crossant		67
Doughnut		76
Graham Crakers		74
Jelly Beans		80
Life Beans		70
Oatmeal Cookie		57
Pizza, Cheese & Tom		60
Pizza Hut, Suoreme		33
Popcorn, lght Micro		55
Potato Chips		56
Pound Cake		54
Power Bar		58
Pretzels		83
Saltine Crackers		74
Shortbread Cookies		64
Snickers Bar		41
Strawberry Jam		51
Vanilla Wafers		77
Wheat Thins		67

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PASTA

Cheese Tortellini		50
Fettucini		32
Linguini		50
Macaroni		46
Spagh, 5 Min Boiled		33
Spagh, 15 Min Boiled		28
Spagh, Prot Enrich		28
Vermicelli		35

Sugars

Fructose		22
Honey		62
Maltose		105
Table Sugar		64

POTATOES

French Fries / Chips		75
Potatoe New, Boiled		59
Potatoe Red, Baked		93
Potatoe Sweet		52
Potatoe White, Boiled		63
Potatoe White, Mash		70
Yam		54

Rice

White Rice		70
Wholegrain Rice		50
Rice, Intant		91