

Fact Sheet: Glycemic Index

This fact sheet has been put together to help you gain a better understanding of the glycemic index. Always consult your Health Care Professional before making any changes to your diabetes management plan.

What is the Glycemic Index (GI)?

The glycemic index (GI) ranks carbohydrates in foods on a scale from 0 to 100 based on how much it raises your blood sugar levels after eating. In other words, the GI is a measure of the effects of carbohydrates on blood sugar levels.

The Glycemic Index is based on a scale, what are the scale levels?

Low GI= Under 55

Moderate GI = 56 -69

High GI = Greater than 70

What is the Glycemic Index Chart?

The glycemic index chart contains a list of foods along with a number ranging from 1 to 100. This number shows how much and how quickly your blood sugar will rise with each item. A food item with a high GI will be digested and burn energy faster while raising your level of blood sugar quickly. An item with a low GI will take more time to digest and will slowly raise your blood sugar level.

Why was the Glycemic Index created?

The GI was developed to help people with diabetes control their blood glucose levels.

How can the Glycemic Index help me?

The GI can help you select foods for diabetes management. Low GI diets have been shown to improve both glucose and lipid levels in people with diabetes (type 1 and type 2). They have benefits for weight control because they help control appetite and delay hunger. Low GI diets also reduce insulin levels and insulin resistance.

What are the benefits of using the Glycemic Index?

There are numerous benefits to using the GI in selecting foods to consume, besides how it effects your blood sugar levels:

- Low GI diets help people lose and manage weight
- Low GI diets increase the body's sensitivity to insulin
- Low GI carbs improve diabetes management
- Low GI carbs reduce the risk of heart disease
- Low GI carbs improve blood cholesterol levels
- Low GI carbs reduce hunger and keep you fuller for longer
- Low GI carbs prolong physical endurance
- High GI carbs help re-fuel carbohydrate stores after exercise

Recent studies from the Harvard School of Public Health indicate that the risks of diseases such as type 2 diabetes and coronary heart disease are strongly related to the GI of the overall diet.

In 1999, the World Health Organization (WHO) and Food and Agriculture Organization (FAO) recommended that people in industrialized countries base their diets on low-GI foods in order to prevent the most common diseases of affluence, such as coronary heart disease, diabetes and obesity.

Talk to your doctor, registered dietitian, diabetes educator or health care professional about the Glycemic Index today.

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I
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D
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X

High
GI

Over
70

Medium
GI

56 to 69

Low
GI

55 and
Under

Glycemic Index Chart of Common Foods

GI numbers may differ by the type of food, its ripeness, processing, the length of storage, cooking methods, and its variety. The numbers provided below should be considered as a guide indicating which category a specific food item is most often rated.

	Low GI (55 and Under)	Medium GI (56 to 69)	High GI (70 and Over)
Cereals	All Bran 51 Bran Buds + Phylum 45 Frosted Flakes (3/4c) 55 Muesli, natural 54 Oatmeal, old-fashioned 48 Special K 54 Multigrain Hot Cereal 25	Cream of Wheat 66 Grape nuts 67 Life 66 Nutri-grain 66 Puffed Wheat 67 Shredded Wheat 67 Fruit Loops 69 Pan cakes (mix) 67 Oatmeal, one-minute 66	Bran Flakes 74 Cheerios 74 Corn Chex 83 Corn Flakes (1c) 83 Raisin Bran 72 Rice Chex 89 Total 76 Rice Krispies 82 Pop Tarts 70 Waffles 76
Fruit	Apple (med.) 38 Cherries (10 lg.) 22 Grapefruit 25 Kiwi 52 Mango 55 Orange 43 Peach 42 Plums 39 Prunes 39 Grapes, green (1c) 46 Strawberries 40	Apricots (3 med.) 57 Banana 56 Cantaloupe 65 Papaya 58 Pear 58 Pineapple (2slices) 66 Raisins (1/4c) 64 Fruits, mixed, dry 60 Fruit Cocktail 55	Dates 103 Watermelon (1 cup) 72
Common Snack Foods	Chocolate Bar 49 Peanut Crunch Bar, Usana 26 Popcorn, light microwave 55 Pound Cake 54 Snickers Bar 41 Strawberry Jam 51 Cashews 22 Peanuts 14 Walnuts 15 Oatmeal Cookie (1) 55 Apple Muffin 48 M&M's Chocolate, peanut 33 Nutella spread (2oz) 30 Fruit strips 29	Croissant 67 Oatmeal Cookie 57 Arrowroot Cookie 63 Potato Chips (14p) 56 Power Bars 58 Shortbread Cookies 64 Wheat Thins 67 Rye crackers 68 Mars bar 68 Granola bar, chewy 61 Muffin, Bran 60 Muffin, Carrot 62 Pastries/Pastry 59 Marshmallows 62	Corn Chips 72 Donut 76 Graham Crackers 74 Jelly Beans 80 Life Saver 70 Pretzels 83 Saltine Crackers 74 Vanilla Wafers 77 Rice cakes, plain (3) 82 Rice crackers 91 Soda crackers 74 Melba Toast 70 Cupcakes 73 Skittles 70
Common Drinks	Apple Juice 40 Orange Juice 50 Grapefruit Juice 48 Tomato Juice 38 Lemonade, sweetened 54 Chocolate Milk 34	Fanta soft drink (1can) 63 Fruit Punch 67 Orange soft drink (1can) 68 Cranberry Juice Cocktail 68	Coca-Cola (1can) 77 Gatorade (8oz) 78 Energy Drinks 136
Milk Products	Skim Milk 32 Soy Milk 31 Whole Milk 30 Yogurt, fruit 36 Yogurt, plain 14 Low fat Ice cream 35	Ice cream, vanilla 60	Tofu Frozen Dessert 115

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	Low GI (55 and Under)	Medium GI (56 to 69)	High GI (70 and Over)
Vegetables & Beans	Carrots, fresh, boiled 49 Peas, fresh, boiled 48 Broccoli / Cabbage 10 Lettuce / Mushrooms 10 Onions / Red peppers 10 Sweet potato 54 Artichoke / Asparagus 15 Spinach / Tomatoes 15 Zucchini / Cucumber 15 Bean Sprouts 25 Green Beans 38 Chick Peas (can) 42 Kidney Beans (can) 52 Baked Beans 48	Corn, sweet 56 Beets 69 Potato, new 62	Parsnips 97 Potato (baked) 93 Potato (mashed, instant) 86 Potato (French fries) 75 Pumpkin 75 Broad Beans 79 Chips 75
Breads	Pumpernickel 49 Sourdough 54 English Muffin, whole grain 45 Multigrain Breads 45 Wholegrain Bread 40	Croissant 67 Rye Bread 64 Wheat Bread 68 Blueberry Muffin 59 Pita Bread 57 Hamburger Bun 61 Hotdog Buns 62	Bagel, plain 72 French Baguette 95 Dark Rye 76 White Bread 70 Kaiser Roll 73 White Rolls 73 Bread stuffing, Paxo 74
Pasta / Rice	Spaghetti 43 Ravioli (meat) 39 Fettuccini (egg) 32 Spiral Pasta 43 Linguini 46 Macaroni 47 Uncle Bens Converted Rice 44 Brown Rice 55 Noodles, Instant 46 Barley, pearled (1/2c) 25	Rice Vermicelli 58 Couscous (1/2 c) 65 Macaroni & Cheese (KD) 64 Wild Rice 57 Long Grain White Rice 58 Udon Noodles 62 Barley, flakes 66 Gnocchi 68	Instant Rice 87 Short Grain White Rice 72 Sticky Rice 90 Millet 71
Sugars / Sweeteners	Fructose 23 Lactose 46 Raw Honey 30 Maple syrup 54	Honey 58 Sucrose (white sugar) 65 Brown sugar 64	Glucose 96 - 100 Maltose 105
Other Staple Foods	Chicken Nuggets, frozen 46 Pizza, Pizza Hut Supreme 36 Cannelloni, with spinach and ricotta 15 Chili Con Carne 34 Chow mein, chicken 55 Fajitas, chicken 42 Beef Casserole 53	Taco Shells 68 Sheppard's Pie 66 Cheese Pizza (Pilsbury) 60 Hamburger (McDonald's) 66 McChicken (McDonald's) 66	Stir Fried Vegetables with Chicken and White Rice 73

The glycemic index is not just a tool for diabetics. Using it can help anyone control their weight and live a longer, healthier life. It takes time and some experimentation to find the right way to use the glycemic index chart, but using it to plan your diet is really worth the effort.

Fact Sheet: Glycemic Index

Does the Glycemic Index apply to all foods?

No, only foods with measureable carbohydrates are rated. Some foods contain almost no carbohydrates so it is not possible to get a GI value from them. These foods include meats, fish, chicken, eggs, cheese, most nuts, oils, cream, butter and most vegetables.

How is the Glycemic Index of foods calculated?

The GI rating is attained in the following way: Measured portions of food containing 50 grams of carbohydrate are fed to 10 healthy people after an overnight fast. Blood samples are then taken at 15-30 minute intervals over the next two hours, giving the blood glucose response curve for the two hour period. That response is then compared against a reference food and averaged across all 10 subjects to get a relative index value.

Does it matter how much low Glycemic Index foods I consume at once?

Yes, the quantity of food consumed at any one time does matter. It is not just the GI that leads to the increase in blood sugar, the amount you consume is equally important. This is referred to as the glycemic load or GL.

What is the Glycemic Load - GL?

Glycemic Load is the application of the GI to a standard serving of food. The GL ranks food according to actual carbohydrate content in a typical portion-size, not how fast a 50 gram amount of carbohydrates raises blood sugar levels. Simply put, the GI combined with total intake is referred to as "Glycemic Load" or GL.

How is the Glycemic Load measured?

To attain the GL of a typical serving of food divide the GI of that food by 100 and multiply this by the useable carbohydrate content (in grams) in the serving size.

Formula: $GL = GI/100 \times \text{Net Carbs}$

A GL of 20 or more is high, a GL of 11 to 19 is medium, and a GL of 10 or less is low.

Can you give me an example of the Glycemic Index and the Glycemic Load?

Yes, we will use a favored summer fruit for this example, the watermelon.

According to the GI chart, watermelon has a high GI at 72. But remember, the GI is calculated based on a consumption of 50 grams of carbohydrates. A normal 120 gram serving of watermelon contains only 6 grams of available carbohydrates. The GI chart was measured on 10 people consuming just over 8 servings each!

So let's do the math: $GL = GI/100 \times \text{Net Carbs}$
 $4.32 = 72/100 \times 6$

Rounded, the GL of a serving of watermelon is 4.

Does this mean I can eat as much high Glycemic Index foods as I want?

No. Each food is very different, most high GI foods rate as high GL foods. The above example is unique and is used to emphasize the importance of taking the time to calculate the GL of foods consumed. Always consult with your doctor or health care professional when considering any changes to your diet or diabetes management plan.

Glycemic Index Online Resources

Canadian Diabetes Association:
www.diabetes.ca

Official Glycemic Index Website
and GI Database:
www.glycemicindex.com

Fifty 50: *Plenty of great information!*
www.lowglycemicdiet.com

Online Glycemic Index Database:
www.gilisting.com

The Glycemic Index & Low GI Recipes:
www.glycemicindex.ca

The Glycemic Gourmet:
www.glycemicgourmet.com

Glycemic Edge:
www.glycemicedge.com

The GI Diet Guide:
www.the-gi-diet.org

Carbs Information:
www.carbs-information.com

Low Glycemic Load:

Making the Switch!

*Don't care for math or complicated calculations?
A simple rule for eating low GI/GL way is the "switch method".*

Simply, switch from eating high carbs for low carbs on the GI chart!