Glycemic Index For Athletes

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Currently, the majority of our nation's health experts support a plant-based diet which is high in carbohydrate (45 – 65% of total calories), moderate in fat (20 – 35% of total calories) and adequate in protein (10 – 35% of total calories) (4).

The Glycemic Index

In addition to the quantity of carbohydrates in the diet, carbohydrates have been looked at based on their glycemic effect using properties such as texture, structure, and absorption rate rather than molecular weight. The glycemic effect of a food is how high and how fast the blood glucose level rises, and how quickly the body responds by returning the blood glucose to level normal (1).

Different foods have different affects on blood glucose depending on:

- The digestibility of the starch in the food.
- Interactions of the starch with the protein in the food.
- The amounts and kinds of fat, sugar, and fiber in the food.
- The presence of other constituents, such as molecules that bind starch.

- The form of the food (dry, paste, or liquid; coarsely or finely ground; how thoroughly cooked; and so forth).
- The combination of foods consumed at a given time.

Foods can be classified by their glycemic index (GI) as either low, medium, or high (See table 1). High GI foods are absorbed quickly by the gut and rapidly raise blood sugar levels, whereas low GI foods are absorbed slowly and have a moderate effect on raising blood sugar levels. Some of the low fat or non-fat, heavily processed foods (e.g. nonfat cookies and cakes) tend to have a high glycemic index due to the addition of simple sugars when the fat is taken out. Whereas minimally processed, high fiber foods, with a little fat (e.g. a slice of multigrain bread with peanut butter) tend to have a lower glycemic index.

How can the GI be used to help athletes?

Although some research indicates that the GI of the carbohydrate that is consumed immediate post exercise might not be as important as long as sufficient carbohydrate is consumed (3), others have shown that ingesting a low GI meal prior to exercise resulted in improved endurance capacity (5). Use the following guidelines to help you take advantage of the known benefits of glycemic index.

- Research suggests that endurance athletes may benefit from eating low-GI foods before exercise because these foods release glucose slowly into the bloodstream, which can help to sustain blood glucose levels (2,5).
- During prolonged exercise, consuming foods or fluids with a medium or high GI may promote carbohydrate usage and therefore help to maintain adequate blood glucose levels.
- After exercise, athletes should try to consume foods and / or fluids with a high GI in order to promote rapid glycogen repletion.

Training and eating properly can increase your glycogen stores and, ultimately, your performance. It is a good idea to understand the different types of carbohydrates and how your body metabolizes them.

References

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About the Author

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Table 1. High Carbohydrate foods and their Glycemic Index

	Carbohydrates (grams)	Total Calories	Glycemic Index
Cereals, Cold & Hot			**Med – High**
Grape nuts (1/2c)	46	200	
Shredded wheat (1 cup)	37	180	
Raisin Bran (1 cup)	42	180	
All Bran (1 cup)	27	180	
Oatmeal (1 oz.)	30	140	
Cream of wheat (1 oz.)	22	100	
Fruits			**Medium**
Apple or Orange	20	80	
Banana	26	105	
Raisins (1/2 cup)	60	240	
Grapes (1 cup)	16	58	
Apple sauce (1/2 cup)	26	97	
Dried apricots (8halves)	30	120	
Starchy Vegetables			**High**
Corn (1/2 cup)	18	80	
Winter squash (1/2 cup)	15	65	
Carrots (1, Medium)	10	60	
Peas (1/2 cup)	10	40	
Tomato sauce (1/2 cup)	10	18	
Legumes			**Low**
Baked beans (1 cup)	50	330	
Lentils (1 cup)	40	215	
Kidney beans (1 cup)	33	204	
Lima beans (1 cup) 28 140	28	140	
Garbanzo beans (1 cup)	27	28	
Split-Pea soup (11 oz)	35	220	
Bread Products			**Med – High**
Whole grain (2 slices)	25	150	
Sub roll (8 inches)	60	280	
Bagel	30	210	
English muffin (1)	25	130	
Bran muffin (large)	45	320	
Corn bread (large slice)	29	198	
Graham crackers (2 squares)	11	60	
Other			
Fruit yogurt (1 cup)	50	250	Low
Ice milk (1/2 cup)	22	120	Low
Spaghetti, macaroni, noodles (1 cup)	40	200	Medium
Rice (white / brown) (1 cup)	35	160	Medium
-parboiled			Low
Baked potato (1 lg.)	55	240	High
Stuffing (1 cup)	40	220	Medium
Pancakes (2)	30	140	Medium
Waffles , Eggs (2)	34	240	Medium