Glycemic Index VS Glycemic Load

A Clinical Nutritionists Perspective

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It's A Lifestyle…. Not a Diet!!!

What is the Glycemic Index?

The Glycemic Index is a numerical Index that ranks carbohydrates based on their rate of glycemic response (i.e. their conversion to glucose within the human body). Glycemic Index uses a scale of 0 to 100, with higher values given to foods that cause the most rapid rise in blood sugar. Pure glucose serves as a reference point, and is given a Glycemic Index (GI) of 100.

Glycemic Index values are determined experimentally by feeding human test subjects a fixed portion of the food (after an overnight fast), and subsequently extracting and measuring samples of their blood at specific intervals of time. The earliest know work on the Glycemic Index was done by Dr. David Jenkins and associates at St. Michael's Hospital in Toronto, Canada. More recently, an effort to expand the Glycemic Index has been made by Jennie Brand-Miller and her associates at the Human Nutrition Unit of the University of Sydney in Sydney, Australia.

The Glycemic Index Yields Some Surprises
Nutritionists used to believe that all simple sugars digested quickly and caused a rapid rise in blood sugar, and that the opposite was true for "complex carbohydrates". But that's not always the case. While many sweet and sugary foods do have high GI's, some starchy foods like potatoes or white bread score even higher than honey or table sugar (sucrose)!

Why is the Glycemic Index Important?

Your body performs best when your blood sugar is kept relatively constant. If your blood sugar drops too low, you become lethargic and/or experience increased hunger. And if it goes too high, your brain signals your pancreas to secrete more insulin. Insulin brings your blood sugar back down, but primarily by converting the excess sugar to stored fat. Also, the greater the rate of increase in your blood sugar, the more chance that your body will release an excess amount of insulin, and drive your blood sugar back down too low.

Therefore, when you eat foods that cause a large and rapid glycemic response, you may feel an initial elevation in energy and mood as your blood sugar rises, but this is followed by a cycle of increased fat storage, lethargy, and more hunger!

Although increased fat storage may sound bad enough, individuals with diabetes (diabetes mellitus, types 1 and 2) have an even worse problem. Their bodies inability to secrete or process insulin causes their blood sugar to rise too high, leading to a host of additional medical problems.

The theory behind the Glycemic Index is simply to minimize insulin-related problems by identifying and avoiding foods that have the greatest effect on your blood sugar.

Should All High-GI Foods be Avoided?
For non-diabetics, there are times when a rapid increase in blood sugar (and the corresponding increase in insulin) may be desirable. For example, after strenuous physical activity, insulin also helps move glucose into muscle cells, where it aids tissue repair. Because of this, some coaches and physical trainers recommend high-GI foods (such as sports drinks) immediately after exercise to speed recovery.

Also, it's not Glycemic Index alone that leads to the increase in blood sugar. Equally important is the amount of the food that you consume. The concept of Glycemic Index combined with total intake is referred to as "Glycemic Load", is probably a more valuable tool.

Although most candy has a relatively high Glycemic Index, eating a single piece of candy will result in a relatively small glycemic response. Why? Well, simply because your body's glycemic response is dependent on both the type AND the amount of carbohydrate consumed. This concept, know as Glycemic Load, was first popularized in 1997 by Dr. Walter Willett and associates at the Harvard School of Public Health. Glycemic Load is calculated this way:

GL = GI/100 x Net Carbs
(Net Carbs are equal to the Total Carbohydrates minus Dietary Fiber)

Therefore, you can control your glycemic response by consuming only low-GI foods and/or by restricting your intake of carbohydrates.

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