

A View of the Glycemic Index from the Trenches

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DiabetesInControl.com

March 14, 2004

The glycemic index (GI) is back in circulation again! Truth be told, it never *did* go away. Since its initial design in 1981, countless research publications *across the globe* continue to attest to its efficacy. Inexplicably, however, the *American* medical diabetes community has been reluctant to endorse its application. As a nutrition consultant in a long-standing private practice based on the use of the glycemic index, I would like to give an insider's view of what it is and how well it has worked for thousands of my patients. In fact, I consider this an obligation to my colleagues.

The Glycemic Index: What is it? It is a ranking system of high carbohydrate (CHO) foods based on their acute glycemic impact. The GI categorizes carbs by their *physiologic response* rather than by their *chemical composition*. Translation: it estimates the postprandial blood glucose (BG) excursion of the food. Why does it only rank carbohydrates? Because carbohydrates are the body's fuel of choice, and, therefore, have the greatest effect on blood glucose levels after eating. This concept was first developed by Drs. David Jenkins and Thomas Wolever while researching the best foods for diabetes control.

The Glycemic Index: How is it measured? Like all research, there is strict protocol to follow when testing foods for the glycemic index:

- Plotting a subject's BG response to 50 grams available CHO of the test food every 15 minutes for the first hour, and every 30 minutes for the second hour.
- Plotting that subject's BG response to 50 grams of pure glucose or white bread (both are used as reference foods) tested over the same time frame.
- Repeating this procedure on 2-3 different days.
- Comparing the two emerging curves gives that subject's response to the reference food; this is done by dividing the area under the curve of the test food by the area under the curve of the reference food (x100 to get a percent).
- This comparison becomes one subject's GI response to the test food.
- Repeating the above procedure with 8-10 other subjects.
- Calculating the average GI of all subjects.
- The resulting average number is the GI of that particular test food.

The Glycemic Index: What is the controversy? Current nutrition recommendations from the American Diabetes Association (ADA) for all persons with diabetes include considering the *total amount of CHO eaten as more*

important than the source or type. Glycemic index research from Canada, Australia, the UK and Europe, South Africa, and Israel (to give a partial list) affirms that the *type of CHO does affect postprandial BG excursions.* That is to say, high GI foods cause a rapid spike in BG levels, while low GI foods release glucose into the bloodstream more slowly. Although in 1984, the ADA supported using the glycemic index, it later rescinded its endorsement. The argument is that there are no apparent differences in postprandial BG levels when a particular carbohydrate is consumed within a mixed meal. Research literature provides an extensive and impressive list of published articles that disputes this criticism.

The Glycemic Index: Does it really work? As an “in the trenches” dietitian, I have consistently seen for more than a decade how easily my patients learn to incorporate low GI foods into their meal plans and how consistently happy (and relieved) they are with their results. It is an easy tool to use because most low GI foods are commonly found in supermarkets. Also, these same low GI foods (whole grain breads, old fashioned rolled oats, and sweet potatoes, for example) are touted for other health benefits (heart health, anti-cancer properties, weight loss, etc.). My patients seem motivated to make the changes they trust will improve their general health as well as their diabetes. Then, once they start feeling and seeing the results of low GI eating – my diabetic patients test four times a day, including pre- and two-hour-post prandially - the numbers speak for themselves, and they become committed to their low GI meal plan. Frequently, my patients are able to reduce or even eliminate their diabetes medications, *including insulin*, once they have learned how to lower their glycemic response to their carbohydrate intake by opting for low GI choices. And benefits of low GI foods are not just limited to diabetic control. Many patients improve their cardiac profiles by lowering their lipids and blood pressure. I have found it unbeatable for weight loss too – one patient lost 195 pounds in two years of low GI eating! Yes, the glycemic index works, sometimes dramatically!

The Glycemic Index: Does it have a future? The answer is a resounding “Yes!” The American Diabetes Association and glycemic index research are moving toward a common ground: **glycemic load**. That is to say, that both groups are pointing to the importance of the total amount of carbohydrate *absorbed*, the “glycemic load” (albeit from different perspectives). ADA explains that by successfully limiting *the total amount of carbs consumed*, the glycemic load will be controlled and the resulting BG level will not spike. GI research ascertains that *low GI carbs control the glycemic load because of how slowly they are absorbed*. In addition, because low GI carbs are more satiating, they are a great tool for limiting total amount of carbs consumed. Herein converges our current understanding of carbohydrate metabolism and BG control.

The Glycemic Index: How to start using it? When designing a meal plan for your patients, choose 45-65% of total calories primarily from the low or intermediate section of the glycemic index. This is not to say that high GI foods should not be eaten; a good rule of thumb is: the higher the GI, the smaller the

portion. This, in fact, is exactly how you control the glycemic load! And this, in fact, is exactly why low GI foods wind up prevailing: *the patient can eat larger quantities without a glycemic overload!* Distribute the remainder of the calories as you would for a healthy balanced diet. To learn more about the glycemic index, look for *Good Carbs, Bad Carbs* or a book series called *The Glucose Revolution*. Clear, interesting hands-on information awaits you, your practice and, of course, the patients you want to help. You can also go online to: www.fifty50.com or www.biochem.usyd.edu.au/~jennie/GI/glycemic_index.html or www.mendoza.com. I can be reached at jburani@bigfoot.com.

A Partial Listing of the Glycemic Index

LOW – 55 or less

Low-fat yogurt with artificial sweetener	14
Canned peaches, in natural juice	30
Apple	36
Tomato soup	38
Spaghetti	41
All Bran	42
Canned baked beans	48
Cheese tortellini	50
Low fat ice cream	52
100% stoneground whole wheat bread	53
Potato chips	54
Special K	54
Sweet potato	54

Intermediate – 55 to 70

Brown rice	55
Oatmeal cookies	55
Popcorn	55
Mini shredded wheats	58
Cheese pizza	60
Hamburger bun	61
Raisins	64
Instant oatmeal	66
Angel food cake	67
Whole wheat bread	69

White bread	70
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High – more than 70

Bagel		72
Watermelon	72	
Kaiser roll	73	
Cheerios	74	
Saltine crackers	74	
French fries	76	
Jelly beans	80	
Rice cakes	82	
Rice Krispies	82	
Instant mashed potatoes	83	
Pretzels	83	
Cornflakes	84	
Baked potato	85	
French bread	95	