



Glycemic 101

How to Effortlessly Control Your Blood Sugar For the Rest of Your Life!

By Amy Wells

<http://www.TreatingDiabetesNow.com>

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Table of Contents

Table of Contents.....	3
Chapter 1: Introduction.....	4
Chapter 2: What is the Glycemic Index?.....	5
Chapter 3: How is the Glycemic Index in Foods Determined?.....	6
Chapter 4: Yes, There are Good Carbs.....	8
Chapter 5: What are the Effects of Glucose?.....	9
Chapter 6: The Facts about Insulin.....	11
Chapter 7: The Glycemic Index and Diabetes Connection.....	12
Chapter 8: Incorporating the Insulin Index.....	14
Chapter 9: Glycemic Index Benefits: Weight Loss.....	17
Chapter 10: Glycemic Index Benefits: Reduced Diabetes Risk.....	18
Chapter 11: Glycemic Index Benefits: Improved Heart Health.....	19
Chapter 12: Glycemic Index Benefits: Lower Cholesterol.....	20
Chapter 13: Go One Step Further with Glycemic Loading.....	22
Chapter 14: How to Recognize Low Glycemic Index Foods Easily.....	23
Chapter 15: How to Calculate the Glycemic Load of any Food.....	24
Chapter 16: Glycemic Index Table of Common Foods.....	25
FOOD.....	26
INDEX RATING.....	26
FOOD.....	27
INDEX RATING.....	27
FOOD.....	28
INDEX RATING.....	28
Chapter 17: “Do’s” and “Don’ts” of Following a Glycemic Index Diet.....	30
Chapter 18: In Conclusion.....	32

Chapter 1: Introduction

This report will show how the Glycemic Index is calculated and how to use it effectively as a guide to live healthier. It will show that following the Glycemic Index can be done very easily and that the benefits of following the Index are many. You will see how controlling the foods you eat based on the Glycemic Index will allow you to lose weight, reduce your risk of diabetes, and lower your cholesterol, just to name a few.

The Glycemic Index is linked directly to the sugars in foods and how they are absorbed. The Index measures carbohydrates, which are made up of simple or complex sugar molecules. The Glycemic Index then ranks the effects these foods have on our systems.

You will see that by understanding these effects and adhering to some simple guidelines, you will be able to recognize foods by the Glycemic Index and make better food choices. You will see that many carbohydrates are very beneficial to you and that you do not have to avoid all carbohydrates as many celebrated diets suggest. Carbohydrates are not the villains that they have been promoted to be!

This report will go into depth to explain how high and low blood sugar levels effect your health and your feelings of well being. You will understand the direct link between the Glycemic Index and controlling diabetes or even substantially reducing the risk of becoming diabetic.

Also included in this report is a handy table of many common foods and their Glycemic Index rating along with easy-to-follow recommendations to take full advantage of the best food choices.

Once you read this report and become familiar with what the Glycemic Index is and how beneficial it is for everyone who follows it, you will find that making the best choices will come naturally to you. You will be able to control your Glycemic Index with little effort on your part.

Chapter 2: What is the Glycemic Index?

The Glycemic Index is a rating system for foods where any type of carbohydrate has a numerical value assigned to it based on its components and how each food affects the body's sugar levels.

Dr. David Jenkins, a Canadian professor and scientist from the University of Toronto developed the concept of a rating index in March of 1981. He felt that a better system needed to be developed due to the popularity of certain diets like Atkins and South Beach that vilified all carbohydrates and many fats. He wanted to show that it was too oversimplified to categorize carbohydrates as “simple” and “complex” or even worse, as “good carbs” and “bad carbs”. Most carbohydrates are too complex to label them in this manner.

He wanted to show the scientific community and thereby, the world that all foods affect our bodies' blood sugar levels differently and that they have many different degrees of being simple and complex, good or bad.

Basically, as food breaks down in our digestive system, many of the food's components, like sugar or vitamins and minerals are absorbed into our blood stream and immediately affect our system. Foods that break down quickly and have high glucose or sugar levels will give us a “spiked” feeling of energy and euphoria. This feeling is commonly referred to as a “sugar high”. Other foods break down more slowly and release their sugars, starches and nutrients over a longer period of time, which avoids any sudden increases to our sugar levels and keeps our insulin levels low. Later in this report, we will explain exactly what glucose and insulin are and how they affect our bodies and our health.

Dr. Jenkins proved that many carbohydrates were, in fact, very healthy and should not be avoided simply because of the fact that they were carbohydrates. As a matter of fact, he discovered that there are dozens of foods that in the past were categorized as unhealthy, but that turned out to be very beneficial. He also encountered some surprising results on foods that had always been considered “diet” foods, but when tested, he discovered that they tested very high on the Glycemic Index. These surprising results will be uncovered later in this report.

Dr. Jenkins continues to work in the field of dietary science and pushes forward by continually pursuing the link between diet and health. He proceeds in proving the theory that eating certain diets can improve or eliminate the risk of health issues such as cancer, diabetes, and cardiovascular disease as well as other diseases.

Chapter 3: How is the Glycemic Index in Foods Determined?

The Glycemic Index uses pure glucose (or in some cases, white bread) as its control food and rates all other carbohydrates in relation to it. The control food or standard, either the glucose or the white bread, is given a rating of “100” and all other foods are tested as to how they affect a person’s blood sugar, insulin and lipid levels compared to the standard.

Each tested food is given a number rating and defined as either “High”, “Medium” or “Low” on the Glycemic Index. Foods fall into the High Glycemic Index when they are rated at 70 or above. If the Glycemic Index for a food is at 55 or lower, it is considered to be a Low Glycemic Index food item. This means that Medium Glycemic Index foods are those that after being tested, fall into the range of 56 to 69.

The actual testing to determine a food’s Glycemic Index is very scientific and takes into consideration many test subjects who undergo multiple tests with the same food and with the control, that being glucose.

A test subject, after fasting for at least 12 hours will have their blood drawn and tested and then is given a specified amount of glucose, usually 50 grams. Their blood is drawn and the blood sugar levels are tested at several specified times throughout the rest of the testing period. This is to determine what the control level is in this individual. Many times, this exact same test of glucose is done two or three times in the same test subject in order to have a more exact result.

After all of the blood sugar levels have been determined, they are plotted on a graph, which shows the curve of how high the sugar levels rose and also how long they remained elevated. The next step is to take the same individual on another day, after another 12 hour fast and have them eat a sample of the food that will be tested. The amount in grams of carbohydrates in the test food must equal the grams of carbohydrates in the glucose control test. Depending on the item being tested, the amount of food that the test subject has to eat may be very little in the case of foods that are very dense in carbohydrates. On the other hand, the test subject may have to eat an enormous amount of a food that has very little carbohydrate in it in order to reach 50 grams of carbohydrates.

Let’s say that the test subject had to ingest pure glucose in the amount of 50 grams of carbohydrates. If the food item being tested were a banana, the test subject would eat the equivalent of 50 grams of carbohydrates in banana. Then, their blood would be drawn and tested at the same times as with the control test with the glucose. The

results of their blood sugar levels would be entered on to the same graph as the glucose tests and the results would be compared.

These “banana” tests would be repeated over the next several days with the same test subject to ensure more reliable results. Now, imagine this same testing process with bananas being repeated over and over again with many different test subjects.

This is the testing that is done for every food that has any type of carbohydrate or sugar in it. Thousands of tests have been done to determine the Glycemic Index value of every one.

Let’s get back to our “banana test”. After all of the tests, both the glucose control tests and the specified food tests, have been completed the results are determined. The number for the glucose test is always set at 100 and the food that is being tested and compared to the glucose is graphed and measured up to how it affects the person’s blood sugar levels in relation to the glucose. It was found that banana affects a person’s blood sugar levels only 53% as much when compared to the levels that pure glucose affects them. Therefore, a banana is rated as 53 on the Glycemic Index, which puts it in the Medium Range.

Does that mean that bananas are bad for you and should be avoided? We will discover what the results of the Glycemic Index mean and how to easily incorporate them into your daily food choices later on in the report. First, let’s look at the myth that all carbohydrates are bad for you and that they should be avoided at all cost.

Chapter 4: Yes, There are Good Carbs

When doctors and scientists began to look at what makes up an average diet and why many people tend to gain weight and become unhealthy, they looked first at the government's food pyramid. They decided to put most of the blame on the base of that pyramid – whole grains and breads, otherwise known as carbohydrates.

The word carbohydrate has become a dirty word that advances the notion that anything that has carbohydrates, or sugars, fibers and starches should never be eaten. You may know someone who treats carbohydrates as if they are poison and can't even bear to look at or touch them let alone eat them. It has almost become a religion to eliminate all carbohydrates from our diets.

The food and restaurant industries, never ones to pass up on a new way to make even more money, immediately came out with new "low carb" items and packaging and restaurants remade their menus to feature "low or no carb" selections. In many cases,

they serve many of the same items, but simply eliminate the bun, french fries or potato and charge even more for the “new” menu item. Their profits have never been higher.

But, is this way of thinking too simplistic? Are all carbohydrates bad for you and furthermore, are they all “bad” to the same degree? That is what the developers of the Glycemic Index set out to prove. They wanted to see hard, scientific evidence that would prove if all carbohydrates were unhealthy. What they found was very astounding. Not only did they discover that different carbohydrates affect people’s blood sugar levels and release of insulin to different degrees, they were also surprised to discover that many carbohydrates that had been considered “bad” really weren’t and others that had seemed “healthy” spiked blood sugar levels tremendously.

An example of that could be watermelon. It is considered a good source of vitamins and healthy and very low in calories, right? However, its Glycemic Index number is 70! That puts it in the High range. The reason behind this is that although watermelon does have very few calories, it is very high in natural sugar and spikes your blood sugar levels forcing your body to release insulin to counteract and lower these levels. Later, we will discuss the consequences that happen to your body when it has to continuously release insulin in order to try and keep your blood levels as even as possible.

On the other hand, items such as artificially sweetened yogurt, peaches and peanuts all score below 30, making them better choices when following a Glycemic Index diet. This means that they will not spike your blood sugar levels and may release energy slowly, instead over a longer period of time. This type of food will give you more energy and keep you feeling satisfied longer. There are many examples of carbohydrates that are good for you that will be covered in the coming chapters.

Chapter 5: What are the Effects of Glucose?

Glucose, in its purest form is a simple sugar that is found in many foods. Our body uses glucose to produce the energy or fuel to help it function. Glucose is a molecule made up of several cells that can be extracted from starchy grains such as wheat, rice, corn and potatoes, to name a few. Once glucose has been extracted from these plants, it can be added into any number of food processes to sweeten and enhance their flavor.

In the United States, the most common glucose food additive is derived from corn or more commonly called cornstarch. Cornstarch is heated in a water solution for a few hours at a relatively low temperature, which results in breaking down the starch into even smaller particles. Then, a common species of fungus is added to the mixture, which promotes the starch to break down to its basic element of glucose. The mixture is then purified and concentrated until the glucose is in crystal form. These crystals are packaged into cubes and sold to the food industry.

There are many other forms of sugars that could be used in food packaging, such as fructose, which is derived from fruits, some vegetables and honey. Fructose is sweeter than glucose and is recommended as an alternative for people with diabetes, but where every cell in the body can metabolize glucose, fructose can only be processed in the liver. All forms of sugars, both simple and complex raise the blood sugar levels and can cause a form of insulin resistance.

When a body ingests glucose or any carbohydrate (all carbohydrates are made up of mostly starches and sugars), it breaks it down into its simplest forms and uses them for energy. Most of the body's energy is produced from carbohydrates. The sugar molecules are broken down and convert into oxygen and carbon dioxide molecules, basically keeping our body functioning. This transformation translates into our metabolism. Our metabolism is how efficiently our body can turn these foods into energy.

Glucose is also one of the primary sources of energy for the proper function of our organs and our brain. This may explain why there is such a feeling of euphoria after ingesting a food item that is very high in glucose.

Many people complain of being dizzy and lightheaded when their blood sugar levels are either too high or too low. The human body tries to keep itself on an even keel and when we overfeed it with sugar or do the opposite and don't feed it enough of the energy it needs, it will try to overcompensate. That is when the body will release insulin to try to compensate for our actions.

Either way, we will feel symptoms. First, we will feel the immediate reaction from either too much glucose or from what we did to our body by under eating. Next, we will then suffer from the counteractions that our body has to perform in order to react to our original actions. Seems like a vicious circle doesn't it?

This is why knowing a little bit about how our bodies work and what insulin is and what it does comes in handy. The next chapter will go into detail about insulin and there you will realize what a valuable, yet fragile, tool insulin is and how easily we can damage our insulin response forever.

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