

# UNDERSTANDING CARBOHYDRATES



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Remember from the Big 3 Macronutrients that carbohydrates are also found in:

- Fruits
- Vegetables
- Legumes
- Dairy
- Nuts and seeds

# CARBOHYDRATES 101

- Some people with better carbohydrate metabolism can handle eating smaller portions of starchy carbs throughout the day.

## **For Example:**

- ½ cup oats at breakfast with egg whites;
- Adding ½ cup of brown rice or quinoa to lunch or dinner;
- A sandwich with sprouted grain bread at lunch with a side salad;
- Then there are those people that can tolerate higher carbohydrate intakes at almost any time of the day.
- They're often naturally lean, and sometimes quite skinny.

# Determining Your Carbohydrate Tolerance

- For those of you wondering what your carb tolerance is, why don't you try testing it?
- Feel free to start with adding one extra fruit serving to your meals for 1-2 weeks.
- Keep everything else in your diet/ lifestyle the same.
- If you are still losing fat then keep the extra piece of fruit.
- Next, try adding one grain at a time when you haven't worked out.
- Again, do this for 1-2 weeks, then evaluate your progress.

# Determining Your Carbohydrate Tolerance

- Slowly adding foods in one at a time to determine your carb threshold will help you determine your exact tolerance for carbs.
- Once you know your response and understand the effects of carbohydrates on your body (such as losing or gaining weight), you can add or remove carbs to your meal plan, accordingly.
- The key here is finding a strategy that doesn't just look good in your food journal, but one that is effective and sustainable.

# GLYCEMIC INDEX & GLYCEMIC LOAD

## What is the “Glycemic Index”?

- The Glycemic Index, or GI, measures how fast a specific carbohydrate (e.g. a banana) will convert into sugar (glucose) in your blood.
- How fast and how high your blood sugar levels will elevate due to eating that food is largely indicative of how much insulin you will secrete and release.
- It is significant because if blood sugar rises too quickly, your brain signals your body to secrete a greater amount of insulin.

# GLYCEMIC INDEX & GLYCEMIC LOAD

## What is the “Glycemic Index”?

- Insulin helps bring sugar out of the bloodstream, primarily by converting the excess sugar into fat and storing it in your body.
- A faster increase in blood sugar leads to a greater insulin release and more storage of fat, before a drastic lowering of blood sugar levels occurs.
- This is what leads to an energy rush followed by lethargy and hunger after eating a candy bar.

# GLYCEMIC INDEX & GLYCEMIC LOAD

## What is the “Glycemic Index”?

- This process is important because an excess of insulin secretion can result in various ill health effects such as fatigue, weight gain and, eventually, Type II Diabetes.
- The GI numbers for each specific food was determined by feeding a group of subjects a carefully measured amount of the tested food (50 grams of carbohydrates).
- In order to ensure accuracy, the subjects’ blood sugar levels were taken before they ate the food and at different times for several hours after they ate.

# GLYCEMIC INDEX & GLYCEMIC LOAD

## What is the “Glycemic Index”?

- The results were averaged out and compared to a “reference food”, which is pure glucose (simple sugar).
- Glucose is ranked 100 and the other foods are given a ranking by comparison of 0-100.

# GLYCEMIC INDEX

Classification	GI range	Examples
Low GI	55 or less	most fruits and vegetables (excluding root vegetables), oats, buckwheat, whole barley, All-Bran
Medium GI	56 - 69	sucrose, candy bar, croissant, brown rice
High GI	70 or more	corn flakes, baked potato, jasmine rice, white bread, white rice

# GLYCEMIC INDEX & GLYCEMIC LOAD

## What is the “Glycemic Load”?

- Since a food’s ranking is based on a standardized 50 grams of carbohydrates, a limitation of the glycemic index is that it does not take into account the actual serving you are eating.
- Let’s take carrots as an example. Carrots have been given a bad rap because of their high GI ranking (74) but, in order to consume 50 grams of carbohydrates from carrots, one would have to eat approximately 50 baby carrots.
- Yes, if you ate 50 baby carrots your blood sugar would spike, but when would you ever eat 50 baby carrots in one sitting?

# GLYCEMIC INDEX & GLYCEMIC LOAD

## What is the “Glycemic Load”?

- Using the glycemic load ranking ensures you are choosing the best carbohydrate options that are based on the actual serving size you are eating.
- The glycemic load is a way of using the GI rank to make them apply to food as people actually eat them - which is not always 50 grams of carbohydrates!

# GLYCEMIC INDEX & GLYCEMIC LOAD

**What is the “Glycemic Load”?**

**Calculating the Glycemic Load:**

- $GL = GI \text{ rank} \times \text{serving size of carbohydrates in grams}$
- Can of Coke:  $.97 \times 42g = 40$  (Gross!)

**Glycemic Load:**

- Low GL = 10 or less
- Medium GL = 10-19
- High GL = 20+

# GLYCEMIC INDEX & GLYCEMIC LOAD

**Websites to identify GI and GL foods:**

<http://www.mendosa.com/gilists.htm>

<http://nutritiondata.self.com/help/estimated-glycemic-load>

<http://www.glycemicindex.com/>