

Confused about carbs?

By Dr David A. Pierotti

There's so much talk about carbohydrate's role in our diet nowadays. Some seek to vilify, others argue for it's importance. Let's try and debunk some myth and confusion.



I want to briefly describe a bit about Glycemic Index (GI), Glucose Load (GL) and insulin sensitivity so you can direct your food choices a little more wisely.

Glycemic Index (GI) is a measure of the quality of carbohydrate. Different carbohydrate foods can behave quite differently in your body. Some break down quickly during digestion and release glucose rapidly into the bloodstream; others break down gradually as you digest them and slowly release glucose. Foods get tested and compared, gram for gram and a given a number between 0 to 100. **High numbers are high GI foods and tend to cause spikes in your glucose levels whereas low numbers are low GI foods and tend to cause gentle rises in blood sugar.** We'll look at why this matters shortly.

Glycemic Load (GL) is a measure of both the quality and quantity of carbohydrate. How high your blood glucose actually rises and how long it remains high when you eat a carbohydrate meal depends on both its GI and the **amount of carbohydrate** in the meal. Researchers at Harvard University came up with a term to describe this: glycemic load. It is calculated by multiplying the GI of a food by the available carbohydrate content (carbohydrate minus fibre) in the serving (expressed in grams), divided by 100. $GL = GI/100 \times \text{available carbs per serving}$. GL per 1000 kJ has been shown to be the single best predictor of actual glycemic responses to single foods and mixed meals. This is crucial to health as I explain below.

Glycemic response or glycemic impact describes the change or pattern of change in blood glucose after consuming a food or meal. Glucose responses can be fast or slow, short or prolonged, high or low. The glycemic response varies from

person to person, depending on their 'glucose tolerance'. A person with diabetes or impaired glucose tolerance will have a higher glycemic response to any food than a lean, young, healthy individual. Nonetheless, in a single individual, we can reliably predict that a low GI/GL meal will produce a lower glycemic response than a high GI/GL meal.

Now let's wrap our heads around the idea of insulin sensitivity. We need insulin to take the glucose from our foods and direct it into our cells. Without it, blood-glucose would continue to rise and our cells would never be properly nourished. The ideal scenario is one where our bodies are highly sensitised to insulin, so when sugar enters the blood, it's easily shunted into the cells where its needed most. What happens, however, with many individuals, is that their bodies become quite *insensitive* to insulin, otherwise known as **insulin resistance**. This means the pancreas tries to produce more and more insulin in an attempt to direct that blood sugar into cells. This results in an overworked pancreas, high blood sugar and insulin, obesity, chronic inflammation, trouble losing weight and a whole raft of other chronic illness. In fact, long term high insulin has been correlated to most modern day chronic disease; the most obvious being diabetes. In general, it will shorten life expectancy and overall quality of life.

High insulin signals the body to store more of the energy we take in as fat rather than burning it. So if we're eating lots of carbs, particularly the high GI and high GL ones, and we get the accompanying high insulin, can you see why this would tend to cause weight gain or trouble losing weight? This fact is at the heart of why high fat and high protein diets work so well to reduce weight, because they cause little effect on insulin.

It's important to understand that carbohydrates are not the enemy. Yes, they have the potential to swing your physiology out of balance, tending towards weight gain and chronic illness, but that is only when the wrong types and amounts are consumed.

So what can we do? Firstly, we must consider uniqueness from person to person. Some individuals are simply more sensitive to the GI and GL of foods such that even small amounts of carbs will disrupt their balance. Even so, this is one of those human conditions that is almost exclusively determined by controlling environmental factors. This means that people are not completely at the mercy of their biology, but instead can take control of their health if they chose to. Responsibility is placed back firmly with you, leaving genes out of the discussion almost entirely. Just be aware that some people will need to consume foods more consciously than others. So here's how we tackle it:

- #1 Listen to your body. Eat when hungry. Eat until comfortable and not over-full. Eat the foods that make you feel good afterwards; when your energy rises and you feel vital you are choosing the correct foods for you
- #2 Choose low GI and GL foods
- #3 Add high quality fats to each meal such as coconut oil, olive oil, avocado, olives, nuts, eggs, butter
- #4 Add vegetables, particularly high fibre vegetables as often as possible
- #5 Eat foods in their natural form. E.g eat more fruit and less fruit juice
- #6 Include protein with each meal
- #7 Discover the most ideal ratios of fat:carb:protein for your body
- #8 Drink plenty of water
- #9 Move. Exercise is profoundly powerful for normalising insulin sensitivity.

Many people tell me they don't really understand what a carbohydrate actually is. Getting to know this will deeply impact your ability to correctly select what's right for you.

A carbohydrate is any food that is composed of **sugar**, either simple or complex. Molecules that end in the suffix 'ose' are a type of carb. For instance glucose, lactose, galactose, cellulose, sucrose, fructose, maltose etc. The sugar may be in simple form such as those just mentioned or bound in large molecules such as **starches**. These include the grains such as wheat, rice, barley, rye, flours, cereals and oats, legumes & pulses such as peas, beans, lentils and chickpeas as well as the starchy vegetables like potato, carrots, sweet potato, pumpkin and corn. All carbs have a baseline taste of sweetness, some milder than others. So although you may not consider bread or rice to be sweet, it's underlying flavour profile is still sweet.

Example GIs of foods

High GI = 70 or more

Medium GI = 56-69

Low GI = 55 or less

milk chocolate	41
cherries	22
cornflakes	77
honey	55

full cream milk	31
sugar	68
white bread	70-80
red lentils	26
basmati rice	58
pasta	30-60
eggs, beef, chicken	0

As you can see, foods vary quite markedly. Protein foods such as egg will have a nil score because they contain zero carbohydrate and therefore have no blood sugar response. Most of these figures are averages and will change based on cooking times, freshness, region of production, etc.

It's important to know that by adding fat and fibre to a meal you will automatically reduce the GI of any carb present. All of the testing done on GI is done on single foods. So, this is slightly out of context. For example not many people will eat pasta just boiled and plain but will have some kind of sauce added. Likewise breakfast cereals are usually consumed with milk, and breads with toppings or sandwich fillings. We can add low GI foods and GI lowering foods to the higher GI examples to give an overall lowered blood sugar effect. For example eating pasta with plenty of olive oil and a fibrous salad on the side will reduce the GI.

Taken out of context, people may tend to look for just the GI of foods forgetting the ratios of carb:protein:fat, and neglecting the need for eating meals that are overall nutritionally balanced and contain the full spectrum of flavours. We have only looked at one tiny snippet of a full picture about carbs in this article. For more info I urge you to do your own further research. Full lists of the GI of foods are available online.

If you have reason to suspect you are insulin resistant, please check in with us here at the clinic and we can test you specifically for it. Often more direct advice and care is required for individual cases. In the mean time, there is nothing stopping you from taking more care with eating and choosing foods that are more congruent with your physiology. Happy eating!

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I run an online community designed to inspire and empower individuals to become the change they want to see in their own lives. Head over there and check out my messages of inspiration and wisdom.

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