

Simple vs Complex Carbs - if it were only that simple

We all hear talk about simple vs complex carbs, usually how the simple ones are bad for us and the complex ones are good for us. If it were only that simple, but it's more complex than that! Simple sugars are those with either just one (e.g. glucose) or two (e.g. sucrose) monosaccharide molecules. Complex carbohydrates are defined as any carb that has three or more monosaccharide molecules. Complex carbs are typically starches of various sorts, but can also be shorter glucose chains such as maltodextrins. You will typically hear people say how we should eat complex carbs because they are better for us than sugars. What they are implying is that complex carbs (starches) will digest more slowly and therefore create a slower, more steady rise in blood sugar. This is only partially true. While some starchy foods are more slowly digested, that's not always the case. Not all complex carb foods are slow digesting. In fact, some foods that are 'complex carbs' raise blood sugar more quickly than some 'simple' sugars. Just because a carb is complex shouldn't lead you to automatically believe it is slow digesting.

Here's where the Glycemic Index (GI) comes in. The GI was developed by Dr. David Jenkins and colleagues at the University of Toronto, as a way to measure how quickly a given food raises our blood sugar. Glucose is the standard at 100. But sucrose, another simple sugar (a disaccharide to be exact), is only 65 because it is half fructose which is slowly digested. Foods containing complex carbs (starches) tend to be in the moderate GI range. Whole grains, beans, sweet potatoes and brown rice are examples. Pasta, for example, is 41 and oatmeal is 49, two foods commonly referred to as complex carbs. But, there are also foods containing complex carbs which have a high GI. White bread has a glycemic index of 70, a little higher than sucrose, common table sugar! Instant rice is a whopping 87. And maltodextrin is more than 100. So complex carbs are not always low glycemic, they can be higher than sugars or simple carbs. It depends on the amount of fat, protein and fiber in the food as these nutrients tend to slow the breakdown of the starch. Also, the more refined a food, the higher its GI is likely to be (because they remove the fiber and grind the starch so finely). Fruits, on the other hand, which contain mostly simple sugars, tend to be fairly low in the GI rankings, largely because they are packaged in the fruit with a lot of water and fiber and take longer to release the sugar compared to eating plain sugar. If you are looking for carbs that do not raise your blood sugar very quickly but rather give you a steady energy release, look for foods with lower GI values. This includes most fruits, vegetables, legumes, whole grains and non-carb foods such as nuts, meats and oils. If, on the other hand, you are looking for quick energy, go for foods which contain ingredients with higher glycemic values such as glucose, maltodextrin, dried fruits, white flour, white rice, and white potatoes. By the way, a candy bar that contains fat, peanuts and sucrose is not really 'quick energy'. A Snickers bar has a GI of 55 and a Powerbar is only 58. You'd be better off eating a slice of white bread if you were on the verge of bonking.

So be careful of the terms you hear and use. Use 'simple carbs' or 'simple sugars' to refer to mono- and disaccharides. Use 'complex carbs' to refer to foods containing starch. Avoid using complex carbs to refer to foods with a slow release of energy. Rather, either talk about the GI of a food, or speak of 'whole foods', such as whole grains. Truly whole foods are more slowly digested because they are packaged with a lot of fiber, which slows the digestion of the

carbohydrates. They also contain a lot of other beneficial nutrients. I would just as soon not use the term 'complex carb' at all, and refer to carbs as either sugars or starches, or as low, moderate or high GI carbs.

So what should you eat? Ideally most of your carbs should be on the lower end of the GI scale. This is true while riding as well as not. Eating complex carbs creates a slow yet steady release of glucose to the blood which prevents a rapid rise of insulin and sugar crash, and their steady release is useful when exercising to provide a steady stream of energy. So fuel up on low to moderate GI carbs a few hours prior to a ride or race and you will have steady energy. The only time you really need to consider consuming high GI foods is when you need a source of quick energy such as during a ride or race, or right after when you want to hit the glycogen window and replenish your body's glycogen stores.

If you are interested in reading more on this topic, a good reference book is "The Glucose Revolution" written by Brand-Miller, Wolever, Colagiuri, and Foster-Powell.

All the best in training, and eating simply (or complexly),

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