Carbs: Quick, Slow or Confusing? - The Athlete's Kitchen

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Once upon a time, carbohydrates were referred to as simple or complex, sugars or starches. Today, the classification is more complicated; carbs are often ranked as quick or slow in a very complex system called the glycemic index. The glycemic index is theoretically based on how 50-grams of carbohydrates (not counting fiber) in a food will affect blood sugar levels. For example, white bread is a high glycemic index carb and supposedly causes a rapid "spike" in blood sugar, while beans are considered a low glycemic index carb and cause a more gradual increase in blood sugar levels.

The glycemic index was initially developed to help people with diabetes better regulate their blood glucose. But people with diabetes generally eat foods in combinations (for example, a sandwich with bread, turkey and tomato); this alters the glycemic index of the meal. Runners, however, commonly eat foods solo (a banana, a bagel). Hence, exercise scientists became curious about the possibility that quick or slow carbs might impact exercise performance because they affect blood glucose in different ways. Could runners use this ranking system to determine what to eat before, during, and after exercise?

Theory vs science

In theory—

- low glycemic index foods (apples, yogurt, lentils, beans) provide a slow release of glucose into the blood stream. Could they help marathoners by providing sustained energy during long runs?

- high glycemic index foods (sports drinks, jelly beans, bagel) quickly elevate blood sugar. Are they best to consume immediately after a hard run to rapidly refuel the muscles and, thereby, enhance subsequent performance at the next workout, if a runner is doing double workouts or in two events at a track meet?

According to Kathy Beals PhD RD, associate professor of nutrition at the University of Utah, runners can disregard all the hype about the glycemic index and simply enjoy fruits, vegetables and whole grains without fretting about their glycemic effect. Speaking at the yearly conference sponsored by SCAN, the Sports & Cardiovascular Nutrition Dietary Practice Group of the American Dietetic Association (wwwSCANpg.org), Beals claimed too many factors influence a food's glycemic effect, including where the food was grown (Canada, US?), the amount eaten (the glycemic index is based on 50-grams of available carbs (fiber is not digested, hence is not "available"); that's a whole bag of baby carrots, not just one serving), fiber content, added butter, the way the food is prepared (mashed, baked, boiled?), and if the food is eaten hot or cold.

To make the glycemic index even less meaningful, each of us has a differing daily glycemic response that can vary ~43% on any given day. Among a group of subjects, the response can vary by~18%. (1) Also keep in mind, well trained muscles can readily take up carbohydrates from the blood stream. Hence, runners need less insulin than unfit people. This means runners have a lower blood glucose response to what would otherwise create a high blood glucose response in an unfit person. Exercise is very important to manage blood sugar—and help prevent Type II diabetes.

All things considered, you, as an athlete, have little need to concern yourself with a food's glycemic effect because you don't even know your personal response to the food. Plus, research of exercise scientists fails to clearly support the theories mentioned above. The research does indicate the best way to enhance endurance is to consume carbs before and during exercise—tried-and-true choices that taste good, settle well, and digest easily. Hence, you need not choke down low glycemic index kidney beans thinking they will help you with sustained energy, when they actually might only create digestive distress! Simply plan to consume about 200 to 250 calories of carbs each hour of endurance exercise and you'll enhance your performance.

Recovery carbs

For runners who do double workouts or compete more than once a day, choosing a high glycemic index food for recovery might seem a smart choice. Theoretically, it provides glucose quickly, more rapidly refuels depleted glycogen stores, and enhances subsequent performance. But, research does not show performance benefits. According to Beals, the more important task is to eat enough carbs (or carbs+ a little protein) as soon as tolerable post-exercise. What's enough? 0.5 g carb per pound of body weight—about 300 calories for a 150 lb person, in repeated doses every two hours.

Insulin and "fattening carbs"

What about the popular notion that high glycemic index foods are fattening because they create a rapid rise in blood sugar, stimulate the body to secrete more insulin, and thereby (supposedly) promote fat storage? Wrong. Excess calories are fattening, not excess insulin. Dieters who lose weight because they stop eating high glycemic index foods lose weight because they eat fewer calories. A year-long study with dieters who ate high or low glycemic index meals indicates no difference in weight loss. (2)

Sugar highs and lows

Some runners claim to be sugar sensitive; that is, after they eat sugar they report an energy "crash." If that sounds familiar, the trick is to combine carbs with protein or fat, such as bread+peanut butter, or apple+(lowfat) cheese. This changes the glycemic index of the carb. By experimenting with different types of snacks, you might notice you perform better after having eaten 100 calories of yogurt (a low glycemic index food) as compared to 100 calories of high glycemic index rice cakes. Honor your personal response when choosing foods to support a winning edge for your body.

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References