

Fast Track Your Nutrition

Carbohydrate - the “go” food

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What is carbohydrate?

Dietary carbohydrate (CHO) is one of the three major nutrients (macronutrients) needed by the body. The other two are protein and fat. Carbohydrate is found primarily in breads and cereals, as well as fruit and vegetables. Dairy products do have some carbohydrate content, but are not considered a major source.

There are 2 kinds of carbohydrate: simple and complex. Since each does different things for us, we need both in our diets.

SIMPLE carbohydrates are absorbed very quickly and easily into the blood stream. As a result, this type of CHO can cause dramatic swings in the blood sugar levels if taken in large amounts quickly.

Simple CHO consist of monosaccharides or disaccharides. Monosaccharides are single-unit sugars; there are 3 abundant ones: fructose (“fruit sugar”), galactose, and glucose.

Disaccharides are double-unit sugars. There are 2 of importance: lactose or “milk sugar”, which is made up of galactose and glucose; and sucrose (table sugar), made up of fructose and glucose.

Sources of simple carbohydrate are: fruit and fruit juice; milk; table sugar; honey; molasses; jam and jelly, and candy. Some of these choices are obviously more nutritious than others!

COMPLEX carbohydrates take longer to be broken down into glucose, so their effect on blood sugar levels is much less dramatic and variable.

Complex carbohydrates consist of starches with long chain structures. They are broken down more slowly than simple CHO, but much faster than protein or fat.

Sources are: bread; cereals; grains such as rice, oats, and corn; pasta; potatoes, and legumes (beans, peas, lentils).

At least 60% of calories in a runner’s diet should come from carbohydrate, and most of

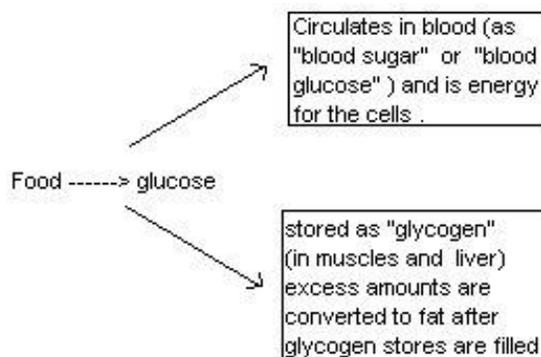
those from complex carbohydrate.

Complex carbohydrates are the really “high octane” fuel that will increase endurance and get you to the finish as fast as possible!

Why is carbohydrate so important?

First of all, there is one basic thing to know: all food is broken down into glucose - the simplest sugar there is. Whether you eat a steak, or a carrot, or a chocolate bar the body will digest it to produce glucose. This is what the body runs on- just like a car needs gas.

Carbohydrates are broken down into glucose faster and more easily than either protein or fat. That’s why CHO are so important in the runner’s diet - to provide energy for body functions, and to train on daily, as well as to fill the muscles with stored glucose. Here’s the relationship:



When this process is speeded up by eating mainly carbohydrate, the result is a constant fuel source to support training.

If you don’t get enough food energy daily, the body will rob the glycogen stores. After that, muscle tissue can be broken down to provide glucose. Both these are hard on athletic performance!

If protein replaces CHO, total protein intake will likely be excessive. This can stress the kidneys, as they have to break down and excrete the excess. This uses a lot of water, which can contribute to dehydration.

If fat replaces CHO, then all the risks of a high diet apply: excess body weight, which will slow you down; high cholesterol; an increased

risk of developing chronic disease such as heart disease, cancer, high blood pressure, diabetes, gallbladder disease, and possibly, kidney stones.

How much carbohydrate is enough?

For the daily training diet, you should be getting 60% total energy (calories) from carbohydrate, 25% from fat, and 15% from fat.

This works out to be 5 -7 grams carbohydrate per kilogram Ideal Body Weight (IBW) or:

5-7 g CHO/kg IBW

For carbohydrate loading the three (some people use 5) days before a long race (over 90 minutes in length), you should increase the carbohydrate to 70%, and drop the fat to 15%. The protein stays at 15%. The CHO increases:

6-9g CHO/kg IBW

Total energy (calories) per day should be 35 - 45 calories/kg IBW. You can use Body Mass Index (BMI) to calculate your IBW.

Carbohydrate Content in foods

There are 15 g of CHO in a slice of bread, 1/2 a hamburger or hotdog roll; 6 saltine crackers; 3 arrowroot cookies or graham wafers; 125 ml potatoes, pasta, or rice, and 250 ml Gatorade.

There are 10 g of CHO in a small apple or orange; 1/2 a banana; 14 grapes; 10 ml raisins, 300 ml milk, and 125 ml of most fruit juices.

Glycemic Index

The last thing about carbohydrates to

consider is glycemic index. This tells us a little more about how much CHO in a food will be broken down into glucose, and thus, useful to the body. The glycemic index of a food is affected by:

- the amount of the food eaten
- fibre content
- fat content
- preparation method

Foods with a high glycemic index get into the bloodstream fast, and are most useful during a race, for fuelling, and post-race, for immediate recovery.

Low to moderate index foods are good for the training diet, in order to fill up the glycogen stores. See which foods are which, below.

- High glycemic Index (61 -100) foods are:**
gatorade; jelly beans; graham crackers; honey; rice cakes; potato; bread and bagels; raisins, and oatmeal.

- Moderate Glycemic Index (40-60) foods are:**
muffins; orange juice; rice; popcorn; corn; sweet potato; banana; lentil soup; oranges; spaghetti; apple juice.

- Low Glycemic Index (<40) foods are:**
apples; pears; Power Bars; PR Bars; yogurt; skim milk; apricots, kidney beans

Remember! You can -

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