Learning About Carbohydrates

You've probably seen ads for low-carb foods and diets, but kids and adults need carbohydrates (say: kar-bo-hi-draytz). Most foods contain carbohydrates, which the body breaks down into simple sugars — the major source of energy for the body.

Two Types of Carbohydrates

There are two major types of carbohydrates (or carbs) in foods: simple and complex.

**Simple carbohydrates:** These are also called simple sugars. Simple sugars are found in refined sugars, like the white sugar you'd find in a sugar bowl. If you have a lollipop, you're eating simple carbs. But you'll also find simple sugars in more nutritious foods, such as fruit and milk. It's better to get your simple sugars from food like fruit and milk. Why? Because sugar isn't added to these foods and they also contain vitamins, fiber, and important nutrients like calcium. A lollipop has lots of added sugar and doesn't contain important nutrients.

**Complex carbohydrates:** These are also called starches. Starches include grain products, such as bread, crackers, pasta, and rice. As with simple sugars, some complex carbohydrate foods are better choices than others. Refined (say: ree-find) grains, such as white flour and white rice, have been processed, which removes nutrients and fiber. But unrefined grains still contain these vitamins and minerals. Unrefined grains also are rich in fiber, which helps your digestive system work well. Fiber helps you feel full, so you are less likely to overeat these foods. That explains why a bowl of oatmeal fills you up better than sugary candy with the same amount of calories as the oatmeal.

So which type of carbs should you eat? Both can be part of a healthy diet.
2 How the Body Uses Carbohydrates

When you eat carbs, your body breaks them down into simple sugars, which are absorbed into the bloodstream. As the sugar level rises in your body, the pancreas releases a hormone called insulin. Insulin is needed to move sugar from the blood into the cells, where the sugar can be used as a source of energy. When this process goes fast — as with simple sugars — you're more likely to feel hungry again soon. When it occurs more slowly, as with a whole-grain food, you'll be satisfied longer. These types of complex carbohydrates give you energy over a longer period of time.

The carbs in some foods (mostly those that contain a lot of simple sugars) cause the blood sugar level to rise more quickly than others. Scientists have been studying whether eating foods that cause big jumps in blood sugar may be related to health problems like diabetes and heart disease. You're probably already on the right track if you are limiting simple sugars (such as candy) and eating more complex carbohydrates (like vegetables, oatmeal, and whole-grain wheat bread).
3 Learning About Proteins

You probably know you need to eat protein, but what is it? Many foods contain protein (say: pro-teen), but the best sources are beef, poultry, fish, eggs, dairy products, nuts, seeds, and legumes like black beans and lentils. Protein builds up, maintains, and replaces the tissues in your body. (Not the tissues you blow your nose in! We mean the stuff your body's made up of.) Your muscles, your organs, and your immune system are made up mostly of protein.

Your body uses the protein you eat to make lots of specialized protein molecules that have specific jobs. For instance, your body uses protein to make hemoglobin (say: hee-muh-glow-bin), the part of red blood cells that carries oxygen to every part of your body. Other proteins are used to build cardiac muscle. What's that? Your heart! In fact, whether you're running or just hanging out, protein is doing important work like moving your legs, moving your lungs, and protecting you from disease.

All About Amino Acids

When you eat foods that contain protein, the digestive juices in your stomach and intestine go to work. They break down the protein in food into basic units, called amino acids (say uh-mee-no a-sids). The amino acids then can be reused to make the proteins your body needs to maintain muscles, bones, blood, and body organs.

Proteins are sometimes described as long necklaces with differently shaped beads. Each bead is a small amino acid. These amino acids can join together to make thousands of different proteins. Scientists have found many different amino acids in protein, but 22 of them are very important to human health.

Of those 22 amino acids, your body can make 13 of them without you ever thinking about it. Your body can't make the other nine amino acids, but you can get them by eating protein-rich foods. They are called essential amino acids because it's essential that you get them from the foods you eat.
4 Different Kinds of Protein

Protein from animal sources, such as meat and milk, is called complete, because it contains all nine of the essential amino acids. Most vegetable protein is considered incomplete because it lacks one or more of the essential amino acids. This can be a concern for someone who doesn't eat meat or milk products. But people who eat a vegetarian diet can still get all their essential amino acids by eating a wide variety of protein-rich vegetable foods.

For instance, you can't get all the amino acids you need from peanuts alone, but if you have peanut butter on whole-grain bread you're set. Likewise, red beans won't give you everything you need, but red beans and rice will do the trick. The good news is that you don't have to eat all the essential amino acids in every meal. As long as you have a variety of protein sources throughout the day, your body will grab what it needs from each meal.

How Much Is Enough?

You can figure out how much protein you need if you know how much you weigh. Each day, kids need to eat about 0.5 grams of protein for every pound (0.5 kilograms) they weigh. That's a gram for every 2 pounds (1 kilogram) you weigh. Your protein needs will grow as you get bigger, but then they will level off when you reach adult size. Adults, for instance, need about 60 grams per day.

To figure out your protein needs, multiply your weight in pounds times 0.5 or you can just take your weight and divide by 2. For instance, a 70-pound (or 32-kilogram) kid should have about 35 grams of protein every day. If you only know your weight in kilograms, you need about 1 gram of protein each day for every kilogram you weigh.

You can look at a food label to find out how many protein grams are in a serving. But if you're eating a balanced diet, you don't need to keep track of it. It's pretty easy to get enough protein. Here's an example of how a kid might get about 35 grams of protein in a day:

- 2 tablespoons (15 milliliters) peanut butter (7 grams protein)
- 1 cup (240 milliliters) low-fat milk (8 grams protein)
- 1 ounce (30 grams) or two domino-size pieces of cheddar cheese (7 grams protein)
- 1.5 ounces (90 grams) chicken breast (10.5 grams protein)
- ½ cup (80 grams) broccoli (2 grams protein)

Of course, you can choose your own favorite combination of protein-rich foods — now that you're a pro at protein!