



# story

## Nutrition 101

### How Do We Decide What to Eat?

Nutrition often isn't the first thing we think about when we eat. We choose foods for a variety of reasons, including personal preference (what we like to eat), habit, emotional comfort, ethnic traditions, social interactions (e.g. parties), availability, convenience, cost, positive and negative associations, and how we view our own bodies.

### How Do We Get Nutrients From Food?

The energy we need to carry out our daily activities comes from green-leafed plants. When people and animals eat plants (or when they eat animals that have eaten the plants) they consume energy in the form of sugar, along with other vital nutrients.

A green plant takes in energy from sunlight, and uses this energy (and a molecule called chlorophyll—which gives plants their green color) to build sugars from water and carbon dioxide. This process is called photosynthesis.

Our bodies metabolize (break down) the sugars in plants so that the energy released can be used as fuel by the body's cells.

### Introducing the Nutrients

Nutrients are chemicals that help us metabolize food, grow, and function. We get nutrients from the food we eat. There are six kinds of nutrients:

- Carbohydrates
- Protein
- Lipids
- Vitamins
- Minerals
- Water

Essential nutrients must come from your diet. Non-essential nutrients are nutrients your body can make on its own. Of the six kinds of nutrients, only carbohydrates must be obtained from diet alone.

**Carbohydrates** are either simple or complex. Simple carbohydrates are sugars. Complex carbs are starches (grains, legumes, root vegetables, peas); and fibers (fruits, vegetables, and grains). Carbohydrates are broken down during digestion into a form of sugar called

### Introducing the Nutrients (continued)

glucose. Glucose is the only source of fuel for your body, nerve cells and brain cells.

**Proteins** help your muscles—and all body tissue and vital organs—grow. Your body needs it to make antibodies to fight off infections.

Meat is one good source of protein but so are many beans, grains and vegetables. Your body breaks down proteins in the same way it breaks down carbohydrates. Proteins turn into amino acids, which are reassembled into a form useful to your body.

Essential amino acids must come from food, because your body can't make them on its own. Your body can make non-essential amino acids. Has anyone ever heard of the term "complete protein?" A complete protein is a food that contains all the essential amino acids your body needs. Some examples of complete proteins are meat, eggs, fish, yogurt and tofu.

**Lipids.** Believe it or not fat and oils (also known as lipids) actually do a lot of good for your body. You don't need a lot but the small amount that you need is really important. A type of lipid—triglycerides—supplies your body with fuel, keeps you warm, and lubricates your internal organs. Without body fat a simple fall could seriously damage your organs.

Fats are in meat, oils, cold-water ocean fish, nuts and seeds. Saturated fats, usually found in red meat, are solid at room temperature. Unsaturated fats like vegetable oil are generally liquid at room temperature. Oils help lower cholesterol, prevent blood clots, and lower blood pressure. Health professionals recommend eating more unsaturated fats than saturated fats.

**Vitamins.** There are two types of vitamins—water-soluble and fat-soluble. Conditions that are too hot or too cold can destroy vitamins, especially water soluble vitamins.

Fat-soluble vitamins get stored in the fat tissues in your body and in your liver.

### GET INVOLVED

#### What Youthink! Heard From You!

You told Youthink! your favorite foods and some thoughts about nutrition.

"Seeing the inequitable distribution of food in the world appalls me. I consider myself fortunate because I can have three meals a day. I would happily halve the amount I eat if some less fortunate person could have a decent meal."

—*Australian Youthink! visitor, 24*

"I love food, home made real food made with natural organic produce—that's food."

—*Colombian Youthink! visitor, 19*

"My favorite is continental and boiled fibrous food and I'm sure this is the best for digestive hygiene. And I don't like canned and packed foods."

—*Nepalese Youthink! visitor, 24*

"My favorite meal is beans with dodo!"

—*Nigerian Youthink! visitor, 22*

"I love pasta (spaghetti) with minced meat stew. It is very delicious and though I do not like eating much, when this particular meal is served, I eat so much of it."

—*Kenyan Youthink! visitor, 20*

### LEARN MORE

Check out these sites to learn more about food and nutrition.

**Cool Food Planet**  
[www.coolfoodplanet.org/](http://www.coolfoodplanet.org/)

**How the Body Uses Fat**  
[www.hhmi.org/biointeractive/obesity/usefat/](http://www.hhmi.org/biointeractive/obesity/usefat/)

**Kids Can Make a Difference**  
[kidscanmakeadifference.org](http://kidscanmakeadifference.org)

**World Health Organization School and Youth Health**  
[www.who.int/school\\_youth\\_health/](http://www.who.int/school_youth_health/)

### Introducing the Nutrients (continued)

Some fat-soluble vitamins stay in your body for a few days, some for several months:

- A (beta carotene), found in carrots, helps you see at night
- Bone-building vitamin D is found in milk
- E, in almonds, protects cells in the body from damage by free radicals
- K, in leafy green vegetables, helps your blood to properly clot when you are cut

Water-soluble vitamins travel through your bloodstream—whatever your body doesn't use comes out when you urinate:

- Vitamin C, found in oranges, helps your body heal if you get a cold.
- B vitamins and Folic Acid in leafy green vegetables, eggs, and grains, help your body make protein and energy

**Minerals.** The body uses minerals to build strong bones, transmit nerve impulses, make hormones, maintain a normal heartbeat, and perform many other functions.

Sixteen minerals are essential in human nutrition. They include calcium in milk, potassium in bananas, and zinc in beef. Minerals are also found in lots of vegetables and fruits. Unlike vitamins, minerals are indestructible. They are the ash that remains when all other organic matter is gone.

Vitamins and minerals can be found in a variety of foods, especially fruits and vegetables. They help keep you healthy—which is why eating fruits and vegetables are so important.

**Water** is the most necessary nutrient of them all—people can't survive for more than a week without it, though you can live for about a month without food. More than half of the weight of your body is water. If you weigh 60 pounds (27 kilograms), fewer than 25 of those pounds (11 kilograms) are minerals and other solid stuff. The remaining pounds are water.

Water dissolves glucose from carbohydrates, amino acids from protein and fat, lubricates and cushions the joints, the inside of the eye, spinal cord, and womb of a pregnant woman. It helps regulate body temperature and maintains blood volume.

### So ...

There are many examples of foods that contain the six classes of nutrients. It is inaccurate to describe a food as "Carbohydrate," "Protein" or "Fat" because most foods contain a mixture of various nutrients, though they may have one nutrient which is dominant.

Pizza, for example, contains carbohydrates in crust and cheese, fats in the cheese, protein in the cheese and any meats added, and vitamins in any veggies added. Milk contains carbohydrates, protein, and fat. And beans contain carbohydrates and protein. Fruits, vegetables, and grains are made of mainly carbohydrates but also contain a significant amount of vitamins, minerals and water.

When it comes to food, variety really is the spice of life, and eating a variety of foods is the best way to ensure good health now and in the future.