

CARBOHYDRATES The main source of energy for living things is **carbohydrates**. Carbohydrates are made of the elements carbon, hydrogen, and oxygen. Sugar and starch are two important carbohydrates. Many fruits are high in sugar content. Potatoes, rice, noodles, and bread are common sources of starch. What are some foods you eat that contain sugars and starches?

Carbohydrates are broken down inside the body into a simple sugar called glucose. The body then uses glucose to produce the energy needed for life activities. If an organism has more sugar than it needs for its energy requirements, it will store the sugar for later use. The sugar is stored as starch. Starch, then, is a stored form of energy.

FATS AND OILS Another group of energy-rich compounds made of carbon, hydrogen, and oxygen are **fats** and **oils**. The more proper scientific term for these compounds is lipids. How can you tell a fat from an oil? Actually, it is quite easy. Fats are solid at room temperature; oils are liquid at room temperature.

PROTEINS Like carbohydrates and fats, **proteins** are organic compounds made up of carbon, hydrogen, and oxygen. But proteins also contain the element nitrogen and sometimes the elements sulfur and phosphorus. Some important sources of proteins are eggs, meat, fish, beans, nuts, and poultry.

The building blocks of proteins are **amino acids**. There are about 20 different amino acids. But because amino acids combine in many ways, they form thousands of different proteins.

Proteins perform many jobs for an organism. They are necessary for the growth and repair of body structures. Proteins are used to build body parts such as hair and muscles. Proteins provide energy. Some proteins, such as those in blood, carry oxygen throughout the body. Other proteins fight germs that invade the body. Still other proteins make chemical substances (hormones) that start, stop, and regulate many important body activities.

ENZYMES A special type of protein that regulates chemical activities within the body is called an **enzyme**. Enzymes act as catalysts. A catalyst is a substance that speeds up or slows down chemical reactions but is not itself changed by the reaction. Without enzymes, the chemical reactions of metabolism could not take place or would occur so slowly that they would be of little help to the organism.