

## Section 8-1

# Summary

## **Carbohydrates, Fats, and Proteins** (pp. 192–199)

### **Objectives**

- **Name** the three classes of nutrients that supply your body with energy.
- **Explain** how the body obtains energy from foods.
- **Describe** the roles that carbohydrates, fats, and proteins play in your body.

**Nutrients** (NOO tree unts) are substances in food that the body needs. Nutrients are used to regulate bodily functions, promote growth, repair body tissues, and obtain energy. There are six classes of nutrients: carbohydrates, fats, proteins, vitamins, minerals, and water. **Carbohydrates, fats, and proteins can all be used by the body as sources of energy.**

**When your body uses the nutrients in foods, a series of chemical reactions occurs inside your cells. As a result, energy is released. Metabolism** (muh TAB uh liz um) is the chemical process by which your body breaks down food to release energy. Metabolism also involves the use of this energy for the growth and repair of body tissues. The amount of energy released when nutrients are broken down is measured in units called **calories**.

**Carbohydrates** (kahr boh HY drayts) are nutrients made of carbon, hydrogen, and oxygen. **Carbohydrates supply energy for your body's functions.** Carbohydrates are divided into two groups: simple carbohydrates, or sugars, and complex carbohydrates, which include starches. **Fiber** is a complex carbohydrate found in plants. Fiber passes out of your body without being digested.

Like carbohydrates, **fats** are made of carbon, hydrogen, and oxygen, but in different proportions. **Fats supply your body with energy, form cells, maintain body temperature, and protect your nerves.** **Unsaturated fats** have at least one bond in a place where hydrogen can be added to the molecule. Unsaturated fats can actually help fight heart disease. **Saturated fats** are fats that have all the hydrogen atoms the carbon atoms can hold. Too much saturated fat in your diet can lead to heart disease. **Cholesterol** (kuh LES tuh rawl) is a waxy, fatlike substance found in animal products. Cholesterol is not a needed part of the diet. **Trans fats** are made when hydrogen is added to fat in vegetable oils.

**Proteins** are nutrients that contain nitrogen in addition to carbon, hydrogen, and oxygen. **The most important function of proteins is their role in the growth and repair of your body's tissues.** **Amino acids** (uh MEE noh) are smaller substances that make up proteins. The proteins in your body are made of 20 amino acids. The nine amino acids that your body cannot manufacture, called essential amino acids, must be supplied through your diet.