

## Nutrients for Wellness

### Guide to Reading

#### Building Vocabulary

Write the terms below in your notebook. As you come across each one in your reading, write a definition beside it.

- carbohydrates (p. 238)
- fiber (p. 239)
- proteins (p. 240)
- saturated fat (p. 240)
- unsaturated fat (p. 240)
- vitamins (p. 240)
- minerals (p. 240)

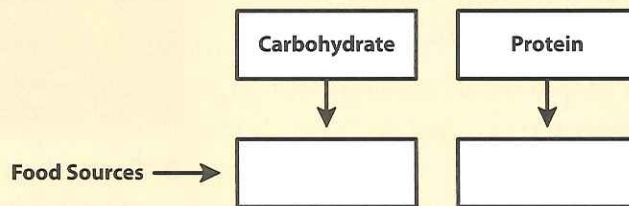
#### Focusing on the Main Ideas

In this lesson, you will learn to

- **identify** the six major classes of nutrients.
- **explain** specific ways your body uses nutrients.

#### Reading Strategy

**Organizing Information** Make a diagram similar to the one below. Include a box for each nutrient and foods that are sources of that nutrient.



### Quick Write

Make a list of foods that you think are high in nutrients. After reading the lesson, check to see if you were right.

## Nutrients and Nutrition

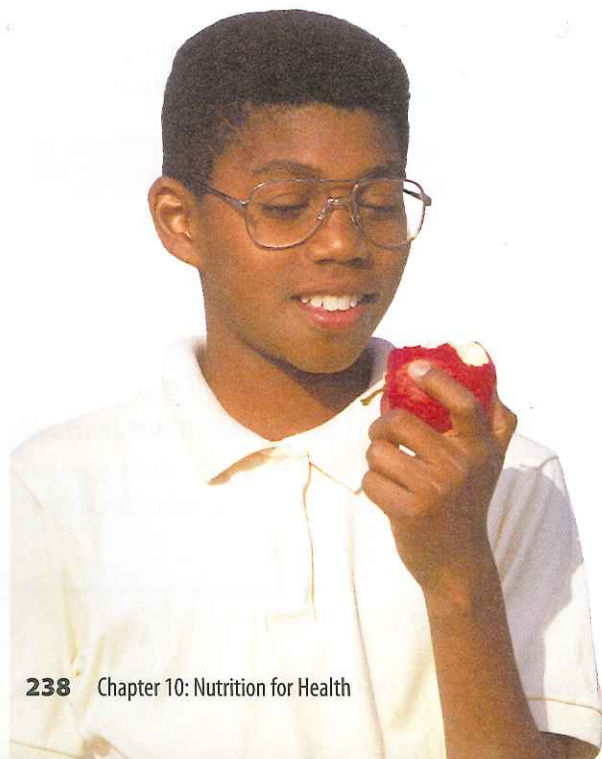
Scientists who study the nutrients in food have found more than forty different kinds. These nutrients are divided into six groups: carbohydrates, proteins, fats, vitamins, minerals, and water. Choosing a variety of healthy foods can help you get enough nutrients from each of these important groups.

### Carbohydrates

What does a steaming plate of spaghetti have in common with a ripe peach? Both foods contain carbohydrates, your body's main energy source.

**Carbohydrates** are *sugars and starches that occur naturally in foods, mainly in plants*. There are two kinds of carbohydrates: simple and complex.

- ◀ An apple is a great source of carbohydrates. **What are some other sources of carbohydrates?**





# Health Skills Activity

## Practicing Healthy Behaviors

### Nutrition from Nature

When carbohydrate-rich foods are processed they can lose some of their nutrients. The process that turns wheat into white flour is a good example of how nutrients can be lost. In this process the inner and outer parts of the wheat grain are separated, and only the inner portion is used to make the flour. All the nutrients in the grain's outer covering are lost. Heating, freezing, dehydrating, and canning are other processes that remove nutrients from food.

When shopping for carbohydrate-rich foods, try to choose whole grains—like barley, millet, and brown rice—or foods that contain them such as whole wheat bread, popcorn, and oatmeal. Likewise try to snack on fresh fruits and vegetables. They are naturally rich in nutrients and haven't been processed.

### On Your Own

Make a list of carbohydrate-rich foods that you enjoy eating. Which of these foods contain whole grains? Develop a plan for including more whole grains in your food choices.

All carbohydrates are made of sugar molecules. When these molecules remain separate, they are called *simple carbohydrates*. Foods that contain simple carbohydrates include fruits, many vegetables, milk, and milk products.

Sugar molecules that join together to form long chains are called *starches*, or *complex carbohydrates*. Foods that contain complex carbohydrates include grains such as rice and pasta, dried beans, and starchy vegetables such as potatoes. Nutritionists say that about half to two-thirds of your daily energy should come from carbohydrates.



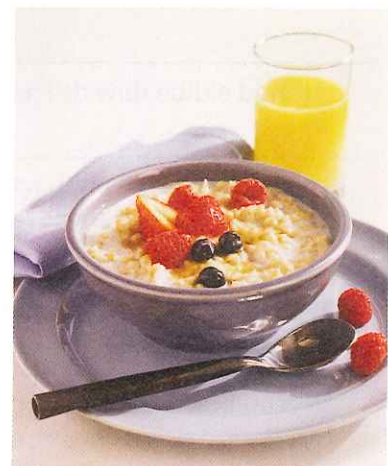
### Reading Check

**Identify** What are complex carbohydrates? Name some foods that contain this nutrient.

### Fiber

**Fiber** is the parts of fruit, vegetables, grains, and beans that your body cannot digest. It is a special type of complex carbohydrate, found in raw fruits, vegetables, and whole grains. As it passes through the digestive system, fiber pushes other food particles along. Choosing to eat high-fiber foods can help reduce your risk of certain types of cancer and heart disease.

- ▼ A great way to include fiber in your diet is by eating whole-grain cereals. **Why is it important to get enough fiber?**



## Media Watch

### Sports Drinks

Staying hydrated—making sure your body has enough water—is especially important during strenuous exercise. Sports drinks can help your body stay hydrated and give you an energy boost. Do a little research on the various kinds of sports drinks, comparing their ingredients and price.

**Which drinks do you think are best? Why?**

## Proteins

**Proteins** are nutrients your body uses to build, repair, and maintain cells and tissues. They are made up of chemical building blocks called *amino acids*. Anyone who has had a stiff muscle get better after a few days of rest has experienced proteins at work. Proteins also play an important role in fighting disease since parts of your immune system are made of proteins.

Foods that contain protein include beef, pork, veal, fish, poultry, eggs, and most dairy products. Notice that all these foods are animal products or byproducts. These foods are called *complete proteins* because they contain all nine of the essential amino acids. Most plant proteins—available from nuts, peas, and dried beans—lack one or more essential amino acids.

**Reading Check** Define What are proteins?

## Fats

Fats are an important part of good nutrition. They promote healthy skin and normal cell growth, and they carry vitamins A, D, E, and K to wherever they are needed in your body.

However, eating a large amount of **saturated fats**, *fats that are solid at room temperature*, is not good for your health. Foods like butter, cheese, and fatty meats are high in saturated fats. Eating too much of these foods can increase your risk of heart disease.

Most of the fats in your diet should be **unsaturated fats**. These are *fats that remain liquid at room temperature*. They come mainly from plant foods such as olive oil, nuts, and avocados.


## Cholesterol

Cholesterol is a fatty substance found in the blood. There are two kinds of cholesterol. The “bad” cholesterol is LDL (low-density lipoprotein), which collects on the walls of arteries and forms a thick, hard substance called plaque. If too much plaque builds up it can block the arteries and cause heart attacks and strokes. The “good” cholesterol is called HDL (high-density lipoprotein). This type of cholesterol helps remove LDL from the arteries so it can be disposed of in the liver. Eating too much saturated fat can increase your body’s level of cholesterol.

## Vitamins and Minerals

Two other kinds of nutrients that the body needs are vitamins and minerals. Though only small quantities of each are needed, they are essential to your body’s health. **Vitamins** are substances that help your body fight infections and use other nutrients, among other jobs. **Minerals** are elements that help form healthy bones and teeth, and regulate certain body processes.

There are two kinds of vitamins: water-soluble and fat-soluble. Water-soluble vitamins, which include vitamins C and B, dissolve in water. Your body cannot store them, so you need to consume them regularly. Fat-soluble vitamins, including vitamins A, D, E, and K, are stored in the body's fat until they are needed. **Figure 10.2** lists the functions and food sources of some vitamins and minerals. Most teens do not get enough vitamin E, calcium, or iron. The best way to get vitamins and minerals is to choose nutritious foods.



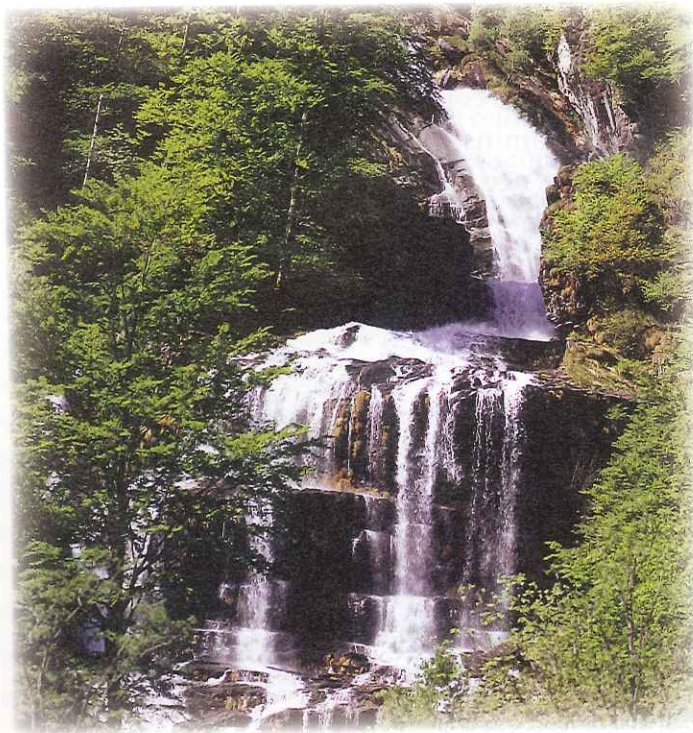
Visit [health.glencoe.com](http://health.glencoe.com) and complete the Interactive Study Guide for Lesson 2.

**FIGURE 10.2**

## VITAMINS AND SELECTED MINERALS: FUNCTIONS AND SOURCES

Vitamins and minerals are essential to your body's health. **What foods do you eat that provide your body with vitamins?**

	Functions	Food Sources
<b>Vitamins</b>	<b>Vitamin A</b> Promotes healthy skin and normal vision	Dark-green leafy vegetables (such as spinach); dairy products (such as milk); deep yellow-orange fruits and vegetables (such as carrots, winter squash, apricots); eggs; liver
	<b>B Vitamins</b> Needed for a healthy nervous system; help in energy production	Poultry; eggs; meat; fish; whole-grain breads and cereals
	<b>Vitamin C</b> Needed for healthy teeth, gums, and bones; helps heal wounds and fight infection	Citrus fruits (such as oranges and grapefruit); cantaloupe; strawberries; mangoes; tomatoes; cabbage and broccoli; potatoes
	<b>Vitamin D</b> Promotes strong bones and teeth and the absorption of calcium	Fortified milk; fatty fish (such as salmon and mackerel); egg yolks; liver
	<b>Vitamin K</b> Helps blood clot	Dark-green leafy vegetables (such as spinach); egg yolks; liver; some cereals
<b>Minerals</b>	<b>Calcium</b> Needed to build and maintain strong bones and teeth	Dairy products (such as milk, yogurt, cheese); dark-green leafy vegetables (such as spinach); canned fish with edible bones (such as sardines)
	<b>Fluoride</b> Promotes strong bones and teeth; prevents tooth decay	Fluoridated water; fish with edible bones
	<b>Iron</b> Needed for hemoglobin in red blood cells	Red meat; poultry; dry beans (legumes); fortified breakfast cereal; nuts; eggs; dried fruits; dark-green leafy vegetables
	<b>Potassium</b> Helps regulate fluid balance in tissues; promotes proper nerve function	Fruits (such as bananas and oranges); dry beans and peas; dried fruits, tomato juice
	<b>Zinc</b> Helps heal wounds; needed for cell reproduction	Meat; poultry; eggs; dry beans and peas; whole-grain breads and cereals



- ▲ Water is all around us. The water that we drink comes from natural sources like the one in this picture.

**What functions does water perform as a nutrient?**

## Water

Water plays a role in many of the body's functions. It helps you digest and absorb food, it regulates body temperature and blood circulation, and it carries nutrients and oxygen to cells. It also removes toxins and other wastes, cushions joints, and protects tissues and organs from shock and damage.

Dehydration, or lack of water in the body, can cause problems like fatigue, confusion, and inability to focus. You need to replace the water your body loses by drinking at least eight 8-ounce cups of fluid a day. Even more water is needed during vigorous activity or hot weather. Choose water or milk most of the time and limit your intake of juice or soda.

 **Reading Check** **Explain** Why does the body need plenty of water?

## Lesson 2 Review

### After You Read

Review this lesson for new terms, major headings, and Reading Checks.

#### What I Learned

1. **Vocabulary** What is *fiber*? What function does it have in the body?
2. **List** Name the six major classes of nutrients.
3. **Identify** Name some sources of complete proteins.

#### Thinking Critically

4. **Apply** Make a list of the foods you have eaten today. Identify which nutrients can be found in each food. Are there any nutrient groups that you have left out?

5. **Hypothesize** How can the food you choose to eat today affect your health in the future?

#### Applying Health Skills

6. **Analyzing Influences** As you learned earlier in this chapter, the media play a role in people's food choices. Find an ad for a food or food product. What methods does the ad use to encourage you to buy the food? Share your findings with those of your classmates.