

# LESSON 1



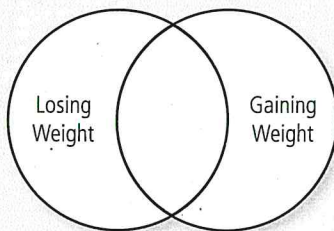
## GUIDE TO READING

**BIG Idea** *Maintaining a healthy weight helps you protect your health and prevent disease.*

### Before You Read

#### Create a Venn

**Diagram.** Draw two overlapping circles. Label them "Losing Weight" and "Gaining Weight." As you read, fill in the outer area of each circle with useful tips on the corresponding topic. Fill in the overlapping area with advice that is useful to everyone trying to maintain a healthy weight.



### New Vocabulary

- ▶ metabolism
- ▶ body mass index (BMI)
- ▶ overweight
- ▶ obese
- ▶ underweight

# Maintaining a Healthy Weight

## Real Life Issues

**On the Unhealthy Track.** Below are some examples of unhealthy habits. Source: Centers for Disease Control and Prevention, Youth Risk Behavior Surveillance, 2007.

**25% of teens do not participate in at least 60 minutes of physical activity at least once a week.**

**35% of teens watch three or more hours of TV on an average school day.**

**Writing** Write a paragraph describing how a person can adopt a healthy habit.

## The Calorie Connection

**Main Idea** You maintain your weight by taking in as many calories as you use.

Calories are units used to measure the energy found in food. If you consume more calories than your body needs, you will gain weight. If you use more calories than you take in, you will lose weight. The balance between the calories you take in and those you burn is called energy balance.

## Your Energy Balance

Your **metabolism**—the process by which the body breaks down substances and gets energy from food—converts the food you eat into fuel. It takes about 3,500 calories to equal 1 pound of body fat. Thus, if you consume 500 fewer calories than you use every day, you will lose 1 pound per week.

**Figure 11.1 Calories in Common Snack Foods**

High-Calorie Snack			Lower-Calorie Alternative		
Food Item	Serving Size	Calories	Food Item	Serving Size	Calories
Potato Chips	1 oz.	155	Pretzels	1 oz.	108
Cola	12 oz.	151	Water	16 oz.	0
Chocolate/caramel candy bar	1.6 oz.	208	Apple	1 medium	70
Chocolate sandwich cookies	6 cookies	282	Granola bar, raisin nut	1 oz.	127
Cream-filled snack cakes	2 (3 oz.)	314	Vanilla yogurt (low-fat)	8 oz.	193

## How Many Calories?

As a rule, foods that are high in fat will also be high in calories. A gram of fat contains nine calories while a gram of protein or carbohydrate contains four. Some low-fat foods, however, may also be high in calories. Sugary foods contain more calories than fresh vegetables and fruits, which are higher in water and fiber.

Food preparation also plays a role in how many calories a food delivers. Fried foods, or those served with a cream sauce or otherwise prepared in a way that adds extra fats and sugars, are likely to be high in calories. To control your weight, eat less of high calorie foods or eat them less often.

Figure 11.1 compares the calories of common snack foods.



### READING CHECK

**Predict** What would probably happen if you increased your activity level without eating more food?

## Maintaining a Healthy Weight

**Main Idea** Body mass index and body composition help you judge whether your weight is healthy.

To maintain a healthy weight, burn the same amount of calories that are consumed. The right weight for each person is based on several factors, including age, gender, height, body frame, and stage and rate of growth.

### Body Mass Index

To learn if your body weight falls into a healthy **range**, calculate your **body mass index (BMI)**—*a measure of body weight relative to height*. Compare it to the charts on page 293 to determine if you're **overweight**—*heavier than the standard weight range for your height*—or at risk for being overweight.

### Academic Vocabulary

**range** (*noun*): the distance between possible extremes



It's important to remember that every teen grows at his or her own rate. It's normal that some of your friends will be taller or shorter than you, and that some will weigh more or less than you.

## Body Composition

Although BMI is a quick, handy way to evaluate your weight, it doesn't tell the whole story. A person who is very muscular, for instance, may have a higher BMI but still be healthy. It's also important to consider your body composition—the ratio of fat to lean tissue in your body.

One commonly used method to measure your BMI is called skin-fold testing. It involves measuring the thickness of skin folds at different points on the body to figure out how much fat is stored beneath the skin. This test should be performed by a qualified professional.



### READING CHECK

**Explain** What does body mass index (BMI) measure?

## Your Weight and Your Health

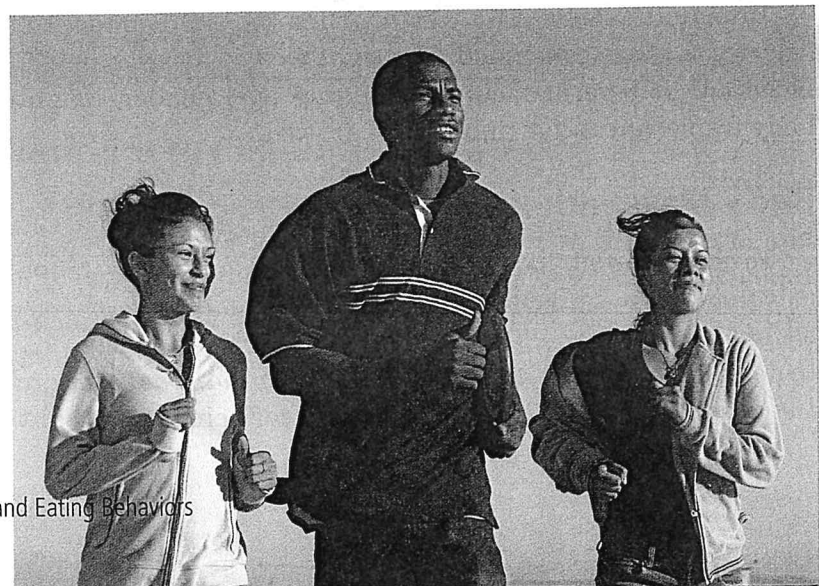
**Main Idea** Being either overweight or underweight carries health risks.

People whose weight does not fall into a healthy range are at a higher risk for various diseases. Weighing too much can increase your risk for health problems such as heart disease, cancer, asthma, osteoarthritis, gallbladder disease, or type 2 diabetes. Teens who weigh too little may feel weak, tire easily, or have trouble concentrating.

### Weighing Too Much

You've probably heard that more than 17 percent of teens in the United States are overweight. This percentage has tripled since the 1980s. Teens who are overweight may be at risk of becoming **obese**—*having an excess of body fat*. Being obese carries serious health risks.

■ **Figure 11.2** Staying active helps you maintain a healthy weight. *What might happen if these teens spent their afternoons playing video games instead of engaging in physical activity?*



# Real World CONNECTION

## Determining BMI

Here's an example for a 16-year-old male who is 6 feet tall and weighs 182 pounds.

$$182 \div 72 = 2.528$$

$$2.528 \div 72 = .035$$

$$0.035 \times 703 = 24.6$$

$$\text{BMI} = 24.6$$

Use this formula to determine your BMI. First, convert your height into inches. Divide your weight in pounds by your height in inches. Divide that result by your height again, and multiply the result by 703.

Look at the charts to the right to determine if you're at risk for being overweight or underweight.

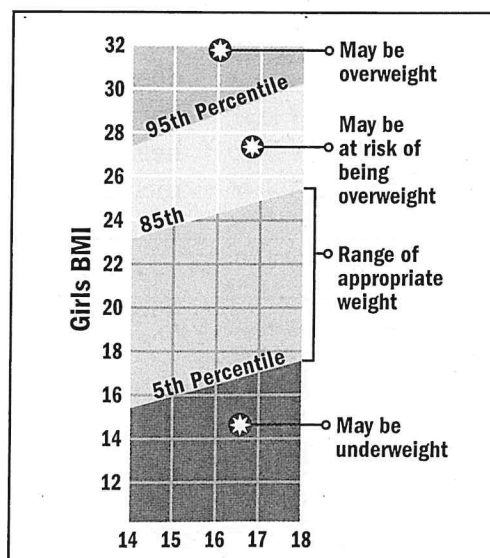
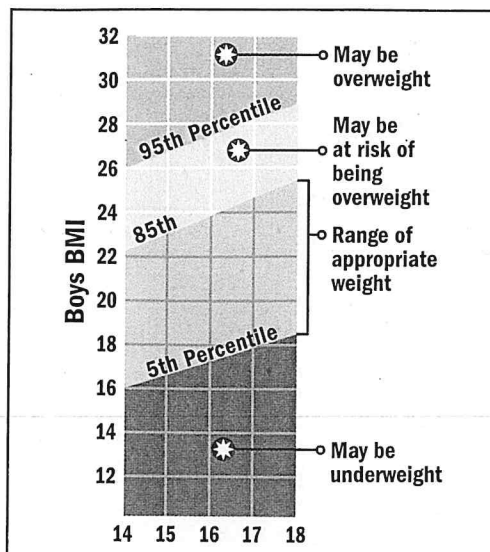
### Activity Mathematics

#### Concept Problem Solving: Make a Plan

Some problems require more than one step to solve. Think through your approach before choosing an operation to use.

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Visit [glencoe.com](http://glencoe.com) and use this code to access an online BMI calculator.

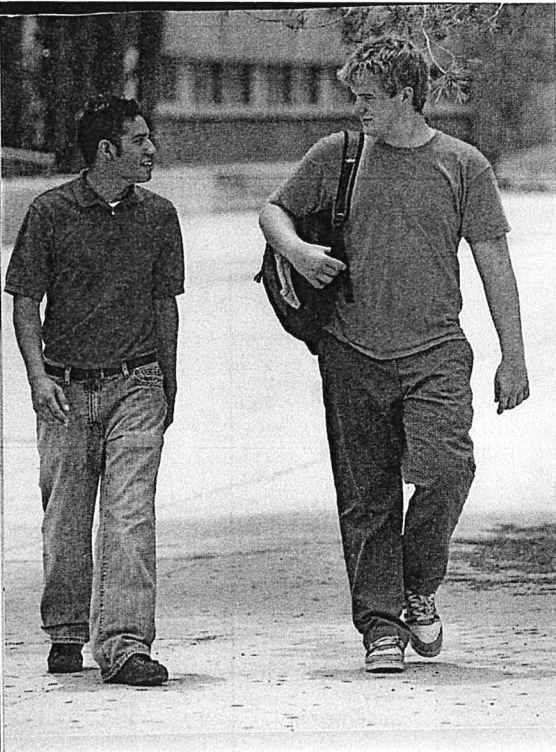


Some people are overweight or obese because of heredity or genetics. Some people may have a slow metabolism, which may lead to weight gain. However, many people who are overweight consume too many calories and get too little physical activity.

## Weighing Too Little

Being **underweight**, or *below the standard weight range for your height*, also carries health risks. Some thin people may have trouble fighting off disease. Others are naturally thin because of genetics or because they have a fast metabolism.





■ **Figure 11.3** There is a wide range of weights that can be considered healthy. *Why should you avoid comparing your weight to that of your friends?*



### READING CHECK

**Summarize** What health problems may underweight teens have?

Teens may be thin because their bodies are growing very quickly. As their growth slows, their bodies may “fill out.” For other teens, however, being too thin can mean that they aren’t getting the calories and nutrients their growing bodies need, or that they are exercising excessively to burn calories.

If your BMI suggests that you might be underweight or overweight, get advice from a health care professional about healthful ways to gain or lose weight.

## Managing Your Weight

**Main Idea** Stay physically active and eat healthful foods.

If your weight seems to be in a healthy range, then you probably don’t need to worry too much about the number of calories you consume. If you want to lose or gain weight, however, you’ll need to adjust either the number of calories you take in, the number you burn through physical activity, or both. The Dietary Guidelines for Americans does not recommend that teens diet. Instead, teens should try to eat a healthful, well-balanced diet every day to reach a healthy weight. Some healthful ways to manage your weight include the following strategies:

- **Target a healthy weight.** Learn your ideal weight range from a health care professional.
- **Set realistic goals.** Eat a consistently healthful diet and exercise regularly.
- **Personalize your plan.** Incorporate foods you enjoy into your daily eating plan.
- **Put your goals and plan in writing.** Write down your goals and your plan.
- **Evaluate your progress.** Track your weight on a weekly basis.

## Healthful Ways to Lose Weight

MyPyramid provides information on food groups, recommended amounts, and the importance of physical activity. Here are some points to keep in mind:

- **Choose nutrient-dense foods.** Fruits, vegetables, and whole grains supply nutrients with fewer calories.
- **Watch portion sizes.** Stick to recommended portion sizes for each major food group.
- **Eat fewer foods that are high in fats and added sugars.** These add calories without many nutrients.

- **Enjoy your favorite foods in moderation.** Try enjoying a small scoop of ice cream less often.
- **Be active.** The information in **Figure 11.5** on page 296 compares the number of calories burned in different types of activity.
- **Tone your muscles.** Since muscle tissue takes more calories to maintain than fat, increasing your muscle mass means that your body will use more calories.
- **Stay hydrated.** Teens should drink between 9 and 13 cups of fluids a day.

## Healthful Ways to Gain Weight

If you are trying to gain weight, the following strategies can help. Teens who want to gain weight should try to increase the amount of healthy muscle on their bodies, not fat. To gain healthy weight, continue a regular exercise program while using the strategies listed below.

- **Select foods from the five major food groups that are higher in calories.** Choose whole milk instead of low-fat or fat-free milk.
- **Choose higher-calorie, nutrient-rich foods.** Examples include nuts, dried fruits, cheese, and avocados.
- **Eat nutritious snacks.** Enjoy healthful snacks more often to increase your daily calorie intake.
- **Get regular physical activity.** If you're increasing your calorie intake to gain weight, don't forget exercise. Physical activity will ensure that most of the weight you gain is muscle rather than fat.



### READING CHECK

**Explain** How is physical activity important to weight loss?



### FITNESSZONE

My dad always says, "If you always do what you always did, you'll always get what you always got." I realized he is saying that if you want to change the outcome, you have to change your behavior. I wanted to get into shape, but skipped workouts and ate junk food. When I changed my behavior, I got what I wanted. Making healthier food choices and exercising regularly improved my fitness level, and I felt a lot healthier. For more fitness tips, visit the Online Fitness Zone at [glencoe.com](http://glencoe.com).

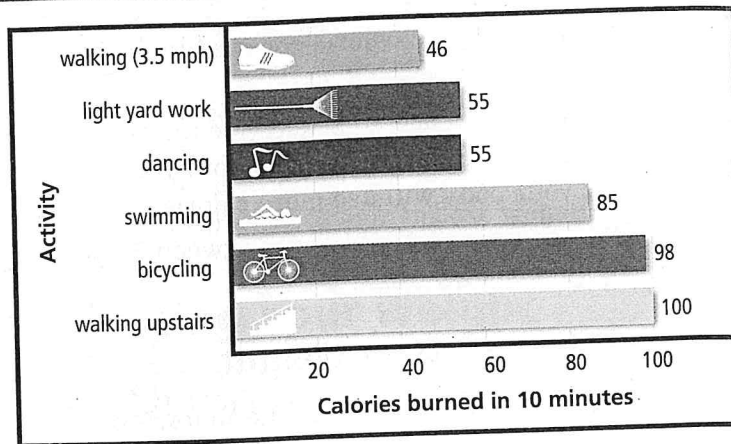


■ **Figure 11.4** Your food choices can help you either gain or lose weight. *List three nutritional qualities that make this lunch a good choice for someone trying to lose weight.*



**Figure 11.5 Calories Burned During Physical Activity**

Physical activity may mean a brief workout. This graph shows how many calories a person weighing 125 to 175 pounds can burn doing each activity for 10 minutes.



## Physical Activity and Weight Management

Physical activity can help you lose or maintain a healthy weight. Some added benefits of regular physical activity:

- It helps relieve stress.
- It promotes a normal appetite response.
- It increases self-esteem, which helps you keep your plan on track.
- It helps you feel more energetic.

## LESSON 1 ASSESSMENT



### After You Read

#### Reviewing Facts and Vocabulary

1. What is *metabolism*?
2. Explain how to calculate your body mass index.
3. List three health problems associated with being overweight and obese.

#### Thinking Critically

4. **Analyze.** Explain how exercise that builds muscle can help promote loss of body fat.
5. **Synthesize.** Mike is 15 years old. He is 5 feet 9 inches tall and weighs 180 pounds. Explain whether his weight is in a healthy range.



Visit [glencoe.com](http://glencoe.com) and use this code to complete the Interactive Study Guide for this lesson.

#### Applying Health Skills

6. **Practicing Healthful Behaviors.** Write a plan describing the strategies you will use to maintain a healthy weight throughout your life.

#### Writing Critically

7. **Expository.** Write a short article aimed at middle school students describing the causes and effects of overweight and obesity problems among teens.

#### Real Life Issues

After completing the lesson, review and analyze your response to the Real Life Issues question on page 290.

## LESSON 2

# Body Image and Eating Disorders

### Real Life Issues

**Warning Signs of an Eating Disorder.** People with eating disorders such as anorexia nervosa have an irrational fear of gaining weight. Would you recognize the signs of anorexia in someone?

Could It Be Anorexia?
Obsessed with weight loss
Brittle hair and nails
Dry and yellowish skin
Constantly feeling cold

**Writing** Write a dialogue of how you would talk to a friend you suspect may have an eating disorder.

## Your Body Image

**Main Idea** The media and other influences can affect your body image.

When you look in the mirror, do you like what you see? If the answer is yes, that means that your **body image**—*the way you see your body*—is positive. Though many teens like the way they look, many others feel insecure about their changing bodies. During your teen years, you will experience many physical changes at a rapid pace. You may feel unhappy with your body type and wish you were taller, shorter, thinner, shapelier, or more muscular.

Where does body image come from? Some teens may compare their bodies to those of models, athletes, or actors. You should keep in mind that the images shown in the media aren't always realistic. Peers can also influence body image. Overweight or underweight teens may feel pressured by their friends and others to look a certain way.

### GUIDE TO READING

**BIG Idea** Poor body image may lead to unhealthy and harmful eating behaviors.

### Before You Read

**Create a Comparison Chart.** Make a chart and label the rows "Anorexia," "Bulimia," and "Binge Eating." Label the columns "Symptoms" and "Health Risks." As you read, fill in the chart with information about these eating disorders.

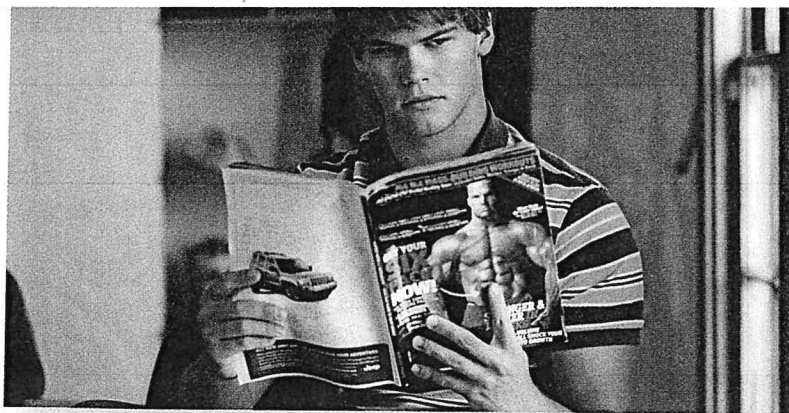
	Symptoms	Health Risks
Anorexia		
Bulimia		
Binge Eating		

### New Vocabulary

- ▶ body image
- ▶ fad diets
- ▶ weight cycling
- ▶ eating disorders
- ▶ anorexia nervosa
- ▶ bulimia nervosa
- ▶ binge eating disorder



ideal body types. Do you think trying to look like magazine models is a realistic or healthy goal?



### READING CHECK

**Define** What is body image?

## Accepting Yourself

The rapid pace of physical changes you experience during your teen years may affect your body image. Growth spurts may cause some teens to look thin. Hormonal changes may cause other teens to gain weight. Try to accept yourself the way you are, or talk to a parent or other trusted adult about your feelings. You can't change your basic body type, and you could hurt your health if you try.

## Fad Diets

**Main Idea** Fad diets are neither safe nor reliable ways to lose weight.

Teens who want to lose weight may be tempted to try **fad diets**, *weight-loss plans that tend to be popular for only a short time*. Fad diets typically promise quick, easy weight loss. People on these diets may lose weight temporarily, but they usually regain it after going off the diet. As a result, they may fall into **weight cycling**, *a repeated pattern of losing and regaining body weight*.

Fad diets may restrict the types and amounts of foods that you eat, making it difficult to stay on them for a long time. Other fad diets use pills or supplements that seem to offer an easy solution to weight loss. Research has shown that they are not effective. Fad diets can **pose** serious health risks.

In fact, most teens should not diet at all. Teens who feel they may need to lose weight should talk to their doctor before starting any diet plan. In rare circumstances, teens with a serious weight problem may be advised to follow a low-calorie plan, but only under the supervision of a health care professional. In general, teens who want to maintain a healthy weight should follow the nutrition guidelines of MyPyramid and get regular physical activity.

### Academic Vocabulary

**pose** (verb): to present or set forth

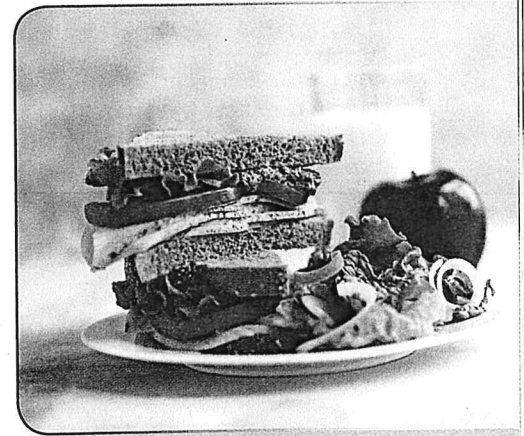
## Types of Fad Diets

All fad diets lose their popularity once people realize that they're unhealthy and that they just don't work. Still, certain types of fad diets keep reappearing every few years in a different form. Here are some common ones:

- **Miracle foods.** These plans promise you can “burn fat” by eating lots of a single food or type of food. In reality, there is no single food that can destroy fat. Moreover, eating only certain types of food will not give your body all the nutrients it needs.
- **Magic combinations.** These plans promise that certain foods will trigger weight loss when they're eaten together. The food combinations may be safe to eat as part of an overall healthy diet, but there's no evidence that combining certain foods will lead to weight loss.
- **Liquid diets.** These plans replace solid food with ultra-low-calorie liquid formulas. These diets can lead to dangerous side effects if they are followed incorrectly. However, doctors may recommend them (with medical supervision) for people who are seriously obese.
- **Diet pills.** Some diet pills and supplements claim to suppress your appetite so that you eat less. Others claim to “block” or “flush” fat from the body. Diet pills can be addictive. In addition, they may cause drowsiness, anxiety, a racing heart, or other serious side effects.
- **Fasting.** Fasting deprives the body of needed nutrients and can result in dehydration. Some religious and cultural customs require people to fast for short periods, such as specific days or times of the day during certain months. This kind of short-term fasting is safe for most people.

## Recognizing Fad Diets

How can you tell the difference between a fad diet and a legitimate weight-loss plan? Any plan that does not follow the MyPyramid guidelines may deprive your body of nutrients. Plans that promise ultra-fast weight loss (more than 2 pounds a week) are likely to be unsafe or ineffective. Plans that promise you can lose weight without boosting your physical activity also are likely to be unsafe or ineffective. Watch out for such words as *effortless*, *guaranteed*, *miraculous*, *breakthrough*, *ancient*, or *secret*. Diets that require you to buy certain products rather than choose healthful foods should also raise your suspicions. Finally, be skeptical about claims that “doctors don't want you to know about this weight-loss plan.” Ask yourself, “Why would my doctor want to keep me from reaching a healthy weight?”



■ **Figure 11.7** Combining a healthful, lower-calorie eating plan with physical activity is a more reliable way to lose weight than any fad diet. *What are some drawbacks of fad diets?*



### READING CHECK

**Explain** What are some typical characteristics of fad diets?



Visit [glencoe.com](http://glencoe.com) and use this code to complete the Student Web Activity to learn more about preventing eating disorders.

## Eating Disorders

**Main Idea** Eating disorders are extreme and dangerous eating behaviors that require medical attention.

As you have learned, some types of weight-loss diets are unhealthy. Yet some people eat in ways that are more harmful to their health. They suffer from **eating disorders**—*extreme, harmful eating behaviors that can cause serious illness or even death*. Eating disorders are classified as mental illnesses, and they are often linked to depression, low self-esteem, or troubled personal relationships. Social and cultural forces that emphasize physical appearance can also play a role. Eating disorders often run in families. Research also suggests that genetics may be a factor in the development of eating disorders.

### Anorexia Nervosa

*Anorexia nervosa is an eating disorder in which an irrational fear of weight gain leads people to starve themselves.* It mainly affects girls and young women. People with anorexia see themselves unrealistically as overweight even when they are dangerously thin. The disorder affects a person's self-concept and coping abilities. Outside pressures, high expectations, a need to be accepted, and a need to achieve are characteristics associated with anorexia nervosa. Medical specialists say that genetics and other biological factors may also play a role in the development of this disorder. Often, people with anorexia develop obsessive behaviors related to food, such as

- avoiding food and meals.
- eating only a few kinds of food in small amounts.
- weighing or counting the calories in everything they eat.
- exercising excessively.
- weighing themselves repeatedly.

Health consequences of anorexia nervosa are related to malnutrition and starvation. The bones of people with eating disorders may become brittle. Body temperature, heart rate, and blood pressure may drop, and there may be a reduction in organ size. Anorexia nervosa can lead to heart problems and sudden cardiac death.

■ **Figure 11.8** People with anorexia can be very thin and still see themselves as overweight. What are other symptoms associated with anorexia?



## Bulimia Nervosa

**Bulimia nervosa** is an eating disorder that involves cycles of overeating and purging, or attempts to rid the body of food. People with bulimia regularly go on *binges*, eating a huge amount of food in a single sitting. During the binge they may feel out of control, often gulping down food too fast to taste it. After the binge they purge, forcing themselves to vomit or taking laxatives to flush the food out of their systems. Instead of purging, some people with bulimia may fast or exercise frantically after a binge.

Unlike people with anorexia, bulimia sufferers are typically in the normal weight range for their age and height. However, they share the same fear of weight gain and dissatisfaction with their bodies.

Health consequences of bulimia nervosa include dehydration, sore and inflamed throat, and swollen glands. The teeth of people with bulimia nervosa may become damaged by regular exposure to stomach acid from vomiting. They may also damage their stomach, intestines, or kidneys. In severe cases, the chemical imbalances that result from purging can lead to irregular heart rhythms, heart failure, and death.

## Binge Eating Disorder

**Binge eating disorder** is an eating disorder in which people overeat compulsively. They binge in much the same way people with bulimia do, eating large amounts of food in a short period of time. These eating binges generally do not occur as frequently as binges associated with bulimia. During a binge, the person may feel guilty and disgusted about his or her behavior, but feel powerless to stop it. Binge eating disorder is more common in males than any other eating disorder, accounting for more than a third of all cases.

Consequences of binge eating disorder include becoming overweight or obese. People with binge eating disorder do not purge. They can also develop the health problems associated with obesity, including high blood pressure, type 2 diabetes, and cardiovascular disease.

## Seeking Help

Eating disorders are serious and dangerous illnesses. People with these disorders need help to overcome them. Medical help may involve counseling, nutritional guidance, a doctor's care, and in extreme cases, a hospital stay.

For anorexia nervosa, the goal of treatment is to restore the patient's body weight to a healthy level. The patient also receives psychological and family therapy. Family members and friends can help by creating a supportive environment and helping the patient learn to eat normally again.



## FITNESSZONE

Some of my friends skip breakfast to lose weight. Some say they don't have the time to eat it. My dad says that he read a magazine article saying that people who eat breakfast every day are more likely to lose weight and keep it off. Eating breakfast gives you an energy boost. It also increases your metabolism, which means that you burn more calories. I think it's so cool that you can actually eat to maintain a healthy weight or lose weight. For more fitness tips, visit the Online Fitness Zone at [glencoe.com](http://glencoe.com).



## READING CHECK

**Compare and Contrast** How is binge eating disorder different from bulimia nervosa?



■ **Figure 11.9** Self-help groups in some communities provide ongoing support for people recovering from eating disorders. How might being part of such a group be helpful?



The key to treating bulimia nervosa is to break the cycle of bingeing and purging. Behavioral therapy can sometimes help with this goal. After that, psychotherapy can address the emotional problems that led to the eating disorder. Similar treatments are used for binge eating disorder.

People with eating disorders often cannot admit that they have a problem. Family members and friends can help them recognize the problem and seek treatment. Some patients end up requiring long-term care to recover. Support groups can help with this process. If you think that you or someone you know may have an eating disorder, your first step might be to talk to a trusted adult, such as a parent, counselor, or school nurse.

## LESSON 2 ASSESSMENT



### After You Read

#### Reviewing Facts and Vocabulary

1. List two factors that influence body image.
2. Define *fad diets*.
3. List three types of eating disorders.

#### Thinking Critically

4. **Synthesize.** How might a poor body image result in an eating disorder?
5. **Evaluate.** If you read an ad in a magazine promising you can lose up to 15 pounds in one month while still eating all your favorite foods, would you think this was a fad diet or a legitimate plan? Explain why.



Visit [glencoe.com](http://glencoe.com) and use this code to complete the Interactive Study Guide for this lesson.

#### Applying Health Skills

6. **Analyzing Influences.** Write an essay describing how teen magazines portray teens and their bodies. How might the magazine's pictures affect the body image of teens?

#### Writing Critically

7. **Narrative.** Write a story about a teen who seeks help for an eating disorder. Describe the symptoms and how the disorder affects the teen's life.

#### Real Life Issues .....

After completing the lesson, review and analyze your response to the Real Life Issues question on page 297.

## LESSON 3

# Lifelong Nutrition

### Real Life Issues

**A Personal Choice.** Miranda is facing a moral dilemma. After spending her summer at a camp where she helped care for farm animals, she's become uncomfortable with the idea of eating meat. She thinks of animals as friends, and she doesn't like the thought of eating them. However, food is an important part of her family's traditions. Miranda is afraid her parents won't understand if she tells them she doesn't want to eat meat anymore.



**Writing** Write a dialogue in which Miranda tries to explain to her parents her desire to become a vegetarian.

## Lifelong Nutritional Needs

**Main Idea** Your age, gender, lifestyle, and health needs can affect your body's food needs.

Everyone has different nutritional needs. An active 16-year-old girl will need more calories and different levels of nutrients than an 80-year-old man. In addition to needing different levels of nutrients, we all have individual nutritional preferences and considerations. People who choose to eat only plant-based foods will select from those food groups. A person with an allergy to nuts will avoid foods that include nuts. There are several factors that affect your nutritional needs, including the following:

- **Age.** During your teen years, your body's calorie needs increase to support your growth. As you get older, your needs will change based on your activity level. You'll learn about the nutritional needs of infants, children, and older adults in Chapters 17 and 18.
- **Gender.** On average, females tend to need fewer calories than males. Throughout their lives, females have a greater need for some nutrients, like iron and calcium.

### GUIDE TO READING

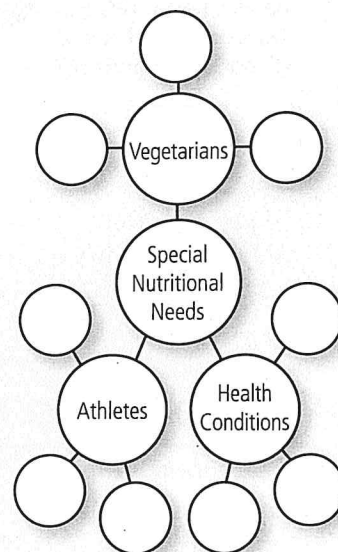


**BIG Idea** Nutritional needs will change throughout your life.

### Before You Read

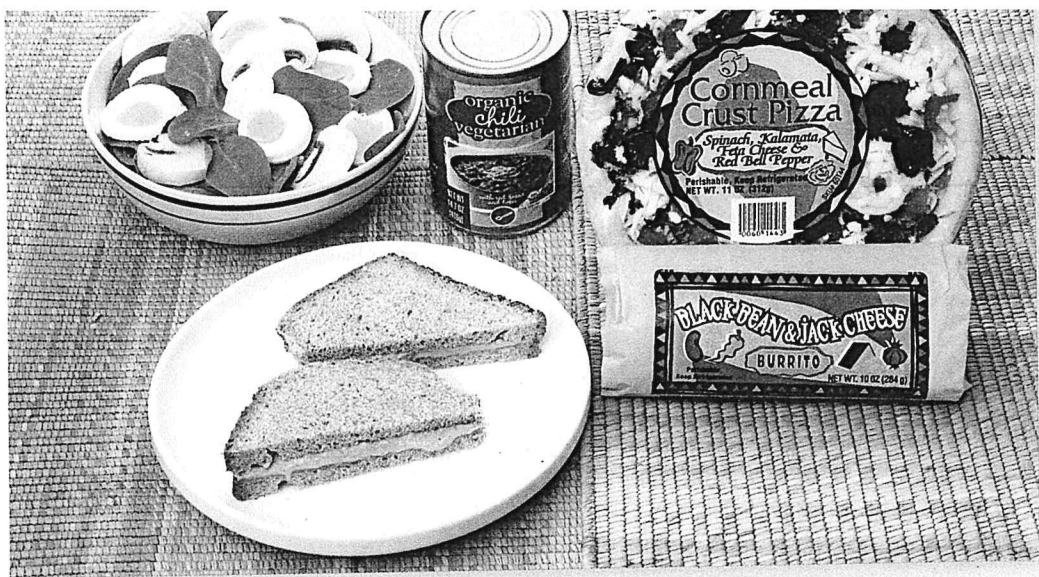
#### Create a Cluster Chart.

Draw a circle and label it "Special Nutritional Needs." Draw surrounding circles and use these to describe nutritional needs for vegetarians, athletes, and those with health conditions. As you read, continue filling in the chart with more details.



### New Vocabulary

- ▶ vegetarian
- ▶ dietary supplements
- ▶ performance enhancers
- ▶ herbal supplements
- ▶ megadoses



■ **Figure 11.10** Vegetarians can choose from a wide variety of healthful and tasty foods to meet their protein needs. Name the foods in each dish that are a source of protein.

Pregnant women also have special nutritional needs. To ensure the health of their babies, pregnant women need extra calcium, iron, and folic acid, along with more calories from food.

- **Activity level.** The more active you are, the more calories your body needs. Very active people need to consume more calories, preferably from nutrient-dense foods, to maintain their weight.

## Vegetarian Diets

A **vegetarian** is a person who eats mostly or only plant-based foods. There are several different types of vegetarianism. The strictest vegetarians, known as vegans, eat only plant-based foods. Other types of vegetarians include

- Lacto-ovo vegetarians who also eat dairy foods and eggs,
- Lacto vegetarians who add dairy foods to their diet, and
- Ovo vegetarians who include eggs in their diet.

People may choose a meatless diet for many reasons. Many believe a vegetarian diet is more healthful. Still others are vegetarians for religious, cultural, or economic reasons—or because they simply prefer vegetarian foods.

Advantages of the vegetarian eating style are that plant-based foods tend to be lower in saturated fat and cholesterol, and higher in fiber, than most animal-based foods. As a result, a well-planned meatless diet may help reduce the risk of cardiovascular disease and some types of cancer.

Drawbacks of the vegetarian eating style are that plant-based foods tend to be lower in certain nutrients, such as protein, iron, calcium, zinc, and some B vitamins. One nutrient, vitamin B<sup>12</sup>, is found only in animal-based foods. Some vegetarians may need to take **dietary supplements**—products that supply one or more nutrients as a supplement to, not a substitute for, healthful foods—to obtain all the nutrients.



### READING CHECK

**Explain** What are some potential health benefits of a vegetarian eating style?



A healthful vegetarian diet contains a variety of foods, including plenty of vegetables, fruits, and whole-grain foods. Choices such as nuts and legumes, as well as eggs and dairy products, can help vegetarians consume enough protein.

## Health Conditions

The foods people eat can **trigger** certain diseases or health conditions. People with these conditions may need to avoid or limit certain foods in order to avoid health problems. Below are some of the health conditions that can be affected by foods:

- **Diabetes.** People with diabetes have to monitor their eating carefully to make sure their blood sugar stays in a healthy range. Diabetics who use insulin must tailor the amount of insulin they inject to the amount of carbohydrates in the foods they eat. Others may be able to control their diabetes without medication by carefully controlling the carbohydrates in foods and beverages they consume. Those who are overweight may find that losing weight helps them control their blood sugar.
- **Food allergies.** Food allergies can range from merely annoying to life threatening. People with severe food allergies must avoid the foods and food ingredients they are allergic to. This means checking ingredient lists on packaged foods and quizzing servers at restaurants. This can be difficult, but not nearly as difficult as being rushed to the emergency room.
- **Lactose intolerance.** People with this food intolerance can't easily digest the lactose in milk and some dairy products. Some people with lactose intolerance can control the problem by consuming smaller portions of milk or getting their calcium from cheese and yogurt, which contain less lactose. Some may take lactase (the enzyme needed to digest lactose) in liquid or tablet form when they eat dairy products.
- **Celiac disease.** Also known as gluten intolerance, this condition makes people unable to tolerate a protein called gluten, which is found in wheat, rye, and barley. Oats may also be harmful to those with celiac disease. The only treatment is to avoid these grains and anything made from them, including bread, pasta, and beer.
- **High blood pressure.** Consuming salt can raise a person's blood pressure. This effect is stronger in some individuals than in others. People with high blood pressure are often encouraged to keep their salt intake low.
- **High cholesterol.** People with high cholesterol may need to reduce their intake of saturated fats and trans fats. These fats increase cholesterol production in the body.

## Academic Vocabulary

**trigger** (verb): to initiate or set off

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Visit [glencoe.com](http://glencoe.com) and use this code to listen to the health podcast *Fighting Teen Obesity*.



## READING CHECK

**Name** What are three health conditions that are caused by foods?



Visit [glencoe.com](http://glencoe.com) and use this code to complete the Student Web Activity on the dangers of steroids and performance enhancing drugs.

## Nutrition for Athletes

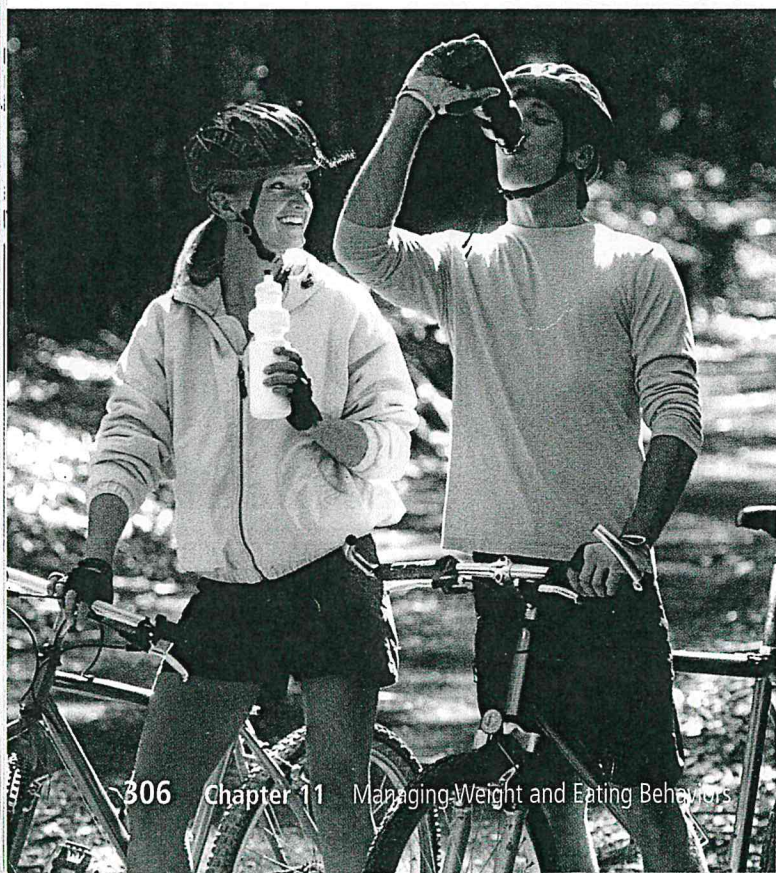
Eating right affects an athlete's performance. Like everyone else, athletes need a balanced diet that supplies enough nutrients to support health. The most important difference is that when you're very active, you need more calories to provide additional fuel. Teen athletes may need from 2,000 to 5,000 calories per day, depending on their sport and on the intensity, length, and frequency of their training.

Athletes need more protein and carbohydrates than inactive people. They may also need more calories from nutrient-dense foods and foods higher in carbohydrates. These types of foods will help student athletes maintain their energy and keep their weight up for athletic competition.

**Making Weight** In sports such as wrestling or boxing, your weight is important because you have to compete with others in the same weight class. If your sport requires you to "make weight," you must compete at a weight that's right for you. Your ideal weight will put your BMI in a healthy range and allow you to eat enough to meet your daily nutrient needs.

Some athletes try to compete in a weight class that's too low for them because they think they will have a better chance against smaller opponents. In reality, they are hurting themselves by trying to force their bodies down to a weight that isn't healthy. Extreme measures such as fasting or trying to sweat off extra weight can cause dehydration, harming performance as well as health. If you really do need to lose some weight, stick to a sensible plan that will take off  $\frac{1}{2}$  to 1 pound per week.

■ **Figure 11.11** Drinking plenty of water during a workout helps you avoid dehydration and keep performing at your peak. *What problems can dehydration cause?*



## Hydration

Teen girls should try to drink about 9 cups of noncaffeinated fluids each day, and teen boys should try to drink 13 cups. Student athletes may need more fluids. When you sweat during exercise, your body loses fluids. These fluids must be replaced to avoid dehydration and heatstroke. Dehydration can lead to fatigue, dizziness or light-headedness, and cramping. Becoming dehydrated can lead to an imbalance of *electrolytes*—minerals that help maintain the body's fluid balance. The minerals sodium, chloride, and potassium are all electrolytes. To prevent dehydration, drink water before and after you exercise, and about every 15 minutes or so during a workout.



## Avoiding Performance Enhancers

Some athletes try to gain an extra edge by using **performance enhancers**—*substances that boost athletic ability*. Many of these substances pose health risks, especially for teens. Using performance enhancers is illegal and has been banned under the rules of many sports organizations. Some of the best-known performance enhancers include the following:

- **Anabolic steroids.** These dangerous drugs, which are illegal without a doctor's prescription, have the same effect as male hormones (known as androgens) in the body. Athletes who take steroids disregard the many health risks in an effort to boost muscle growth. You will learn more about steroids and their risks in Chapter 22.
- **Androstenedione** (better known as “andro”). Andro is a weaker form of the androgens that the body produces naturally. Although some athletes take it to build muscle, its actual benefits are doubtful. Andro has many of the same side effects as steroids, and its use is now banned in professional sports.
- **Creatine.** This compound helps release energy. Some athletes take creatine supplements to give them a quick burst of power and reduce muscle fatigue. However, it can actually hurt athletic performance on account of its side effects, which include cramps and nausea. Using it at high doses may damage the heart, liver, and kidneys.
- **Energy Drinks.** These contain high amounts of caffeine. Energy drinks provide quick energy in an unhealthful way by increasing your heart rate. Using energy drinks to enhance your performance may actually hurt you. Drinking caffeinated beverages may cause your body to lose more fluids, leading to dehydration.

Using any type of performance enhancer, whether it's legal or illegal, is not worth the risk. You can perform at your peak without using performance enhancers by training, eating right, and getting enough rest.

## Eating Before a Competition

Eating before a competition provides your body with the energy it needs to get through the competition. Try to eat about three to four hours before a competition so that your stomach is empty by the time you compete.

Before competing, try to choose meals that are high in carbohydrates and low in fat and protein. Fat and protein stay in the digestive system for a longer period of time. Good choices of foods to eat before a competition include pasta, rice, vegetables, breads, and fruits. Also, remember to drink plenty of water before, during, and after the competition.



I carry healthy snacks in my backpack every day. When I get hungry, I'm not tempted to buy something that's not healthy. An apple or a small bag of carrots are easy to carry. They're healthier than a candy bar or chips, too. For more fitness tips, visit the Online Fitness Zone at [glencoe.com](http://glencoe.com).





■ **Figure 11.12** Supplements can help you meet your needs for specific nutrients, but they cannot take the place of healthful foods. What are some reasons people might use supplements?

## Using Supplements

**Main Idea** Dietary supplements can help people meet their nutrient needs if they cannot do it with food alone.

Walk down the aisles of any drugstore, and you will see a huge array of dietary supplements. These supplements provide various combinations of vitamins, minerals, protein, and fiber. You may also see **herbal supplements**, which are *dietary supplements containing plant extracts*.

The most important thing to know about supplements is that they are no substitute for eating a variety of healthful foods. Some people, however, may not be able to get all the nutrients they need through food alone. For example, strict vegetarians may use supplements to provide the nutrients they are not getting from animal-based foods. Pregnant or nursing women may use them to make sure they get all the extra nutrients their bodies need. Supplements can also help people who are recovering from illness or taking medications that reduce the body's ability to absorb certain nutrients.

## Concerns About Dietary Supplements

Most people who follow a nutritious, well-balanced eating plan, such as the one recommended in MyPyramid, will not need a multivitamin. However, multivitamin and mineral supplements are generally safe to use, as long as you use them correctly. For starters, do not take supplements that provide more than 100 percent of the Daily Values for any nutrient. Taking **megadoses**, or *very large amounts*, of any supplement can be dangerous. Some vitamins, such as A, D, E, and K, can build up in the body and become toxic.

Many herbal supplements raise additional concerns. Some people take these “natural” products because they believe they are a safe alternative to drugs for treating certain conditions. These supplements can still be dangerous. Using the herb ephedra, or ma huang, can lead to a heart attack or stroke. Products containing this herb were banned in 2004. Other herbs, such as kava and comfrey, have been linked to serious liver damage.

The National Institutes of Health (NIH) cautions that herbal supplements are just like drugs. Herbal supplements aren't regulated in the same ways as foods or drugs. However, the U.S. Food and Drug Administration (FDA) can take action to stop the sale of supplements that are unsafe or mislabeled. To be safe, treat supplements with the same caution you'd use with any drug. Check with your health care provider before using any herbal supplements, especially if you are already taking other medications.



### READING CHECK

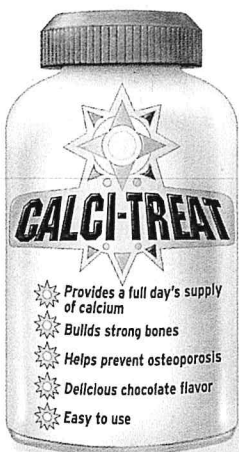
**Identify** List two kinds of people who might use dietary supplements.

# Health Skills Activity

## Accessing Information

### Evaluating Supplements

Sanjay knows that teens may need more calcium than adults because their bodies are growing at a fast rate. He's thinking about taking a calcium supplement. Looking in the supplements aisle at the drugstore, he sees that the labels make many types of claims. In his health class, Sanjay learned that certain claims must be reviewed by the FDA. For instance, a product's manufacturers must get FDA approval to claim that their product can prevent or treat any disease. However, FDA approval is not needed for general claims about the product's benefits, such as "promotes circulatory health." Sanjay thinks about which of the Calci-Treat claims can be proven.



**Writing** Write a paragraph describing how Sanjay could evaluate the claims made on this supplement's label. Consider these questions:

1. Which of the claims can be proved? Which are opinions?
2. Which of these claims require FDA approval? Which might not have received FDA approval?
3. What sources can Sanjay check to confirm the claims made on this label?

## LESSON 3 ASSESSMENT

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### After You Read

#### Reviewing Facts and Vocabulary

1. What are *dietary supplements*?
2. List three factors that can affect your body's nutrient needs.
3. Why should teen athletes avoid performance enhancers?

#### Thinking Critically

4. **Analyze.** How would cutting back on food and water affect the performance of a student athlete?
5. **Evaluate.** Is it safe for a vegan to take a daily supplement that provides the recommended dose of iron, calcium, and B vitamins? Explain why.

#### Applying Health Skills

6. **Advocacy.** Create a flyer telling teens about the dangers of using dietary supplements. Include warnings about specific types of supplements.

#### Writing Critically

7. **Expository.** Write an article for the school newspaper. In the article, tell teens the right and wrong ways to improve athletic performance.

#### Real Life Issues .....

After completing the lesson, review and analyze your response to the Real Life Issues question on page 303.

## Health eSpotlight



With the information you have learned from the chapter, go back and view the videos and discuss as a class.

## LESSON 1

## Vocabulary Review

Use the vocabulary terms listed on page 311 to complete the following statements.

- \_\_\_\_\_ is a measure of body weight relative to height.
- Adults who have an excess of body fat may be considered \_\_\_\_\_.
- People who are \_\_\_\_\_ have a BMI that is lower than the healthy range.

## Understanding Key Concepts

After reading the question or statement, select the correct answer.

- Measuring the thickness of skin folds at different points on the body is a way to determine your
  - body mass index.
  - body composition.
  - metabolism.
  - energy balance.
- Which of the following is *not* a health risk associated with being overweight?
  - Hypertension (high blood pressure)
  - Type 2 diabetes
  - Osteoarthritis (a joint disease)
  - Anemia (a condition in which the blood cannot carry needed oxygen to the body)
- A safe, reasonable rate of weight loss is
  - 1 pound per day
  - 5 pounds per week
  - 1/2 to 1 pound per week
  - 1 to 2 pounds per year

## Thinking Critically

After reading the question or statement, write a short answer using complete sentences.

- Explain. How is your weight related to your energy balance?
- Identify. List three healthful steps you could take if you wanted to gain weight.
- Compare and Contrast. What is the difference between being overweight and obese?
- Evaluate. Why is physical activity important for all teens, regardless of weight?

## LESSON 2

## Vocabulary Review

Correct the sentences below by replacing the italicized term with the correct vocabulary term.

- A repeated pattern of losing and regaining body weight is called *binge eating*.
- Fad diets* are extreme, harmful eating behaviors that can cause serious illness or even death.
- Anorexia nervosa* is an eating disorder in which people overeat compulsively.



## Understanding Key Concepts

After reading the question or statement, select the correct answer.

- Which of the following might cause teens to develop a negative body image?
  - Focusing on their good qualities
  - Being picked on at school because of the way they look
  - Being physically active
  - Having friends with positive attitudes toward their own bodies



15. Teens who think they need to lose weight should
  - a. take diet pills.
  - b. follow a liquid diet.
  - c. begin a fast.
  - d. consult a doctor.
16. Which of the following is *not* a behavior associated with anorexia nervosa?
  - a. Avoiding food and meals
  - b. Exercising excessively
  - c. Eating a large amount of food in a single sitting
  - d. Weighing oneself repeatedly
17. The first step in treating bulimia nervosa is to
  - a. break the cycle of bingeing and purging.
  - b. get the patient's weight back to a normal level.
  - c. address the emotional problems that led to the eating disorder.
  - d. provide nutritional guidance.

## Thinking Critically

*After reading the question or statement, write a short answer using complete sentences.*

18. **Explain.** Why are fad diets generally not safe or reliable ways to lose weight?
19. **Explain.** What makes very-low-calorie diets dangerous for teens?
20. **Analyze.** Identify three signs that distinguish a fad diet from a legitimate weight-loss plan.
21. **Explain.** What are three risks associated with using diet pills?
22. **Compare and Contrast.** How are the eating disorders anorexia and bulimia similar? How are they different?
23. **Compare and Contrast.** How are bulimia and binge eating disorder similar? How are they different?

## LESSON 3

### Vocabulary Review

*Use the vocabulary terms listed on page 311 to complete the following statements.*

24. People who eat mostly or only plant-based foods are called \_\_\_\_\_.
25. \_\_\_\_\_ are dietary supplements containing plant extracts.
26. Taking a \_\_\_\_\_, or a very large amount, of any supplement can be dangerous.



### Understanding Key Concepts

*After reading the question or statement, select the correct answer.*

27. Which of the following foods would all vegetarians refuse to eat?
  - a. Eggs
  - b. Milk
  - c. Chicken
  - d. Bread
28. People with celiac disease must avoid foods that contain
  - a. sugar.
  - b. lactose.
  - c. gluten.
  - d. fiber.
29. Which medical condition may require people to limit their salt intake?
  - a. Allergies
  - b. Diabetes
  - c. High cholesterol
  - d. High blood pressure

# Assessment

## Thinking Critically

*After reading the question or statement, write a short answer using complete sentences.*

30. **Identify.** List three factors that may influence a person's calorie and nutrient needs.
31. **Analyze.** How can good nutrition enhance your health throughout your life?
32. **Evaluate.** Describe the health advantages and disadvantages of a vegetarian eating style.
33. **Explain.** How are dehydration and electrolyte imbalance related?
34. **Explain.** Why are dietary supplements not a substitute for eating a variety of healthful foods?
35. **Identify Problems and Solutions.** Toby has a milk allergy and is unable to consume dairy products. How might he benefit from dietary supplements?
36. **Describe.** What health problems can result when athletes take performance-enhancement drugs or supplements?



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## Technology PROJECT-BASED ASSESSMENT

### Helping a Friend

#### Background

Eating disorders are a serious medical problem that can result in lifelong health problems and even death. Often, people with eating disorders try to hide the disorder from their friends and family.

#### Task

With your group of three students, create a streaming video of a short skit that demonstrates how you would talk to a friend who you suspect may have an eating disorder. Encourage your friend to get help. Your video should also demonstrate ways to obtain help for the friend from a trusted adult.

#### Audience

Students in your class

#### Purpose

Practice communicating effectively with your peers and with adults

#### Procedure

- 1 Conduct an online search on symptoms of eating disorders and review those in your textbook. Choose one eating disorder to focus on in your video.
- 2 Collaborate as a group to write the script, film, and upload the video with these characters: a student with a suspected eating disorder, the student's friend, and an adult.
- 3 Be sure your chosen method of communication demonstrates the following: expressing concern and support, telling an adult about the problem, and making sure your friend receives help.
- 4 When creating the video, remember that a person with an eating disorder may not accept advice.
- 5 Show your video to the class. Ask permission to upload your group's video to the school's Web site.