

Chapter 9

Making Healthy Food Choices

Section 1

Choosing Food Wisely

Building Health Skills

- **Accessing Information**
Reading a Food Label

Section 2

Safely Managing Your Weight

- **MediaWise** Evaluating Diet Plans

Section 3

Nutrition for Individual Needs



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Discovery
EDUCATION

TEENS Talk

CLASSROOM VIDEO #9

Goals for Healthy Eating

Preview Activity

Why Are Goals Hard to Reach?

Complete this activity before you watch the video.

1. Read the quote below.
A goal without a plan is just a wish.
Antoine de Saint-Exupéry
2. In a paragraph, discuss whether or not you agree with this quote. Cite specific examples from your life to support your view. **WRITING**

Section 1

Choosing Food Wisely

Objectives

- ▶ **Summarize** three main reasons why you eat.
- ▶ **Analyze** the information contained on food labels.

Vocabulary

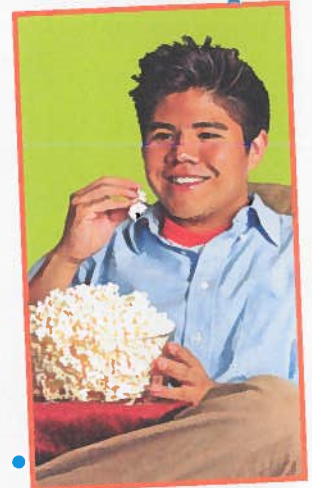
- hunger
- appetite
- basal metabolic rate (BMR)
- Daily Values

Warm-Up

Quick Quiz How many of these statements are true for you?

- 1 I eat when I am bored.
- 2 I eat when I feel stressed.
- 3 I eat when I am out with friends.
- 4 I eat when I am watching television, listening to music, or just sitting around.
- 5 I eat when I feel sad or depressed.

WRITING Look over your responses. What did you learn about your eating patterns?



Why You Eat

If asked why you eat, you might say, “Because I get hungry.” But, is this always true? **You eat for several reasons: to meet your nutritional needs, to satisfy your appetite, and to supply your body with energy.**

Hunger is a feeling of physical discomfort that is caused by your body’s need for nutrients. By contrast, **appetite** is a desire for food that is based on emotions and other factors rather than nutritional need. Unlike hunger, which is an inborn response, appetite is learned. For example, your appetite may make you want to eat popcorn because you have learned to associate its aroma with a delicious taste. Your appetite can make you eat even when you are not hungry.

Basal Metabolic Rate One factor that affects your calorie needs is your basal metabolic rate. Your **basal metabolic rate (BMR)** is the rate at which you use energy when your body is at rest. The higher your BMR, the more calories you burn. Various factors affect BMR. Younger people tend to have a higher BMR than older ones. People who have more muscle mass tend to have a higher BMR than those with less muscle mass because muscle burns calories.

Your level of activity also affects your calorie needs. The more active you are, the more calories you need. Figure 1 compares the number of calories burned per hour for various activities.

The Foods You Choose Do you eat breakfast? What's your favorite snack? Your answers to questions like these depend on many factors.

- ▶ **Personal Preferences** Of course, you choose many of the foods you eat simply because they taste good. You might love the taste of peanut butter, for example, while your sister might not. You might dislike fish, or choose not to eat red meat. Whatever your personal preferences are, they have a huge impact on your food choices every day.
- ▶ **Cultural Background** Your cultural background, or heritage, may also influence your eating habits. For example, one family might eat a traditional Korean breakfast of soybean soup and rice. Another family might eat a typical Mexican meal of tortillas with beans and rice.
- ▶ **Time and Convenience** Do you sometimes eat on the run? A busy schedule might lead you to choose foods that can be prepared quickly or that can be easily carried in your backpack. Alternatively, you might choose to eat at a fast-food restaurant rather than prepare a meal at home.
- ▶ **Friends** When you eat a meal with friends, you may choose different foods than when you are by yourself or with your family. Friends might influence you to try new foods or to change your eating habits.
- ▶ **The Media** Every day, you are bombarded with information about food—in advertisements, news articles, diet books, and more. All of these messages can influence your decisions about what foods to eat or to avoid.

**Connect to
YOUR LIFE**

Think about a food choice you made today. What factors influenced that choice?

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For: More on appetite and eating

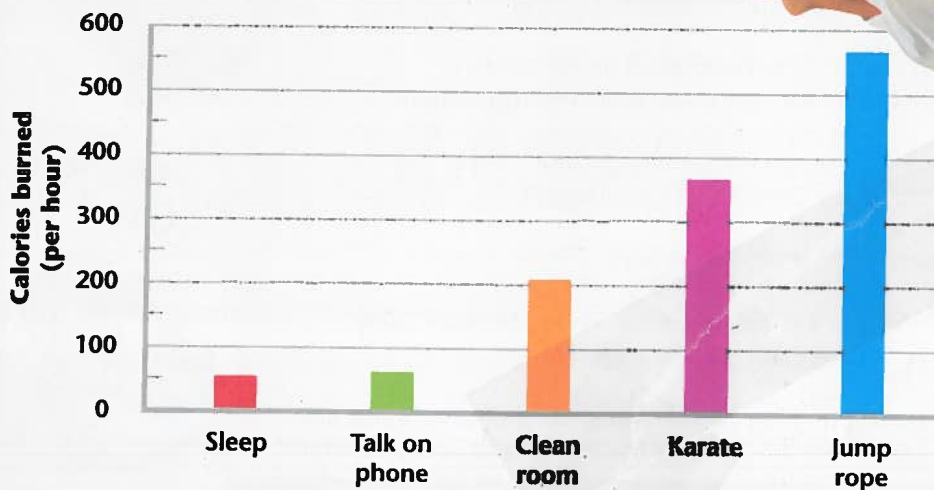
Visit: PHSchool.com

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FIGURE 1 The number of calories you burn depends on how active you are. More intense exercise burns more calories than less intense exercise or sitting.

Calculating In terms of calories burned, about how many hours of talking on the phone would it take to equal one hour of karate? **MATH**

Calories Burned During Various Activities



Evaluating Food Choices

Planning a sensible diet involves choosing nutritionally balanced meals and snacks. Your food choices may seem overwhelming, but tools are available to help you make good decisions. **When choosing foods, it is important to read and evaluate the information on the food label. The information includes nutrition facts, nutrient and health claims, Daily Values, and freshness dates.**

Food Labels The United States Food and Drug Administration (FDA) requires manufacturers to include food labels on most prepared foods, such as canned and frozen foods, breads, cereals, and drinks. Food labels must list specific nutrition facts about the food, including calorie and nutrient content, and the ingredients. The label is usually printed on the back or side of the package. You can practice reading food labels as you study the Building Health Skills on pages 224–225.

Nutrient and Health Claims Have you ever seen a label on a food that said “fat free”? Did you wonder what that claim meant? The FDA also sets standards regarding the nutrient claims that can be printed on a food label.

In addition, the FDA has approved the use of some health claims on food labels. Health claims are statements that link use of the food to certain health risks or benefits. Figure 2 explains some common nutrient and health claims you might see on food labels.



FIGURE 2 Claims about a food’s nutrient or health benefits must follow standards set by the FDA. **Evaluating** How can foods that bear the claim “light” help you have a healthier diet?

Nutrient and Health Claims

| What It Says | What It Means |
|---------------------------------------|---|
| ...Free | <i>Fat Free:</i> Contains less than 0.5 g fat <i>Sugar Free:</i> Contains less than 0.5 g sugars |
| Low in... | <i>Low in Calories:</i> Contains less than 40 calories <i>Low in Sodium:</i> Contains less than 140 mg sodium |
| High in... | <i>High in Vitamin C:</i> One serving provides 20% or more of the Daily Value for vitamin C. |
| Light | Contains 50% less fat or at least $\frac{1}{3}$ fewer calories |
| Excellent source of... | <i>Excellent source of calcium:</i> One serving provides 20% or more of the Daily Value for calcium. |
| May reduce your risk of heart disease | Can appear on fiber-containing grain products, fruits, and vegetables that are also low in saturated fat and cholesterol. |



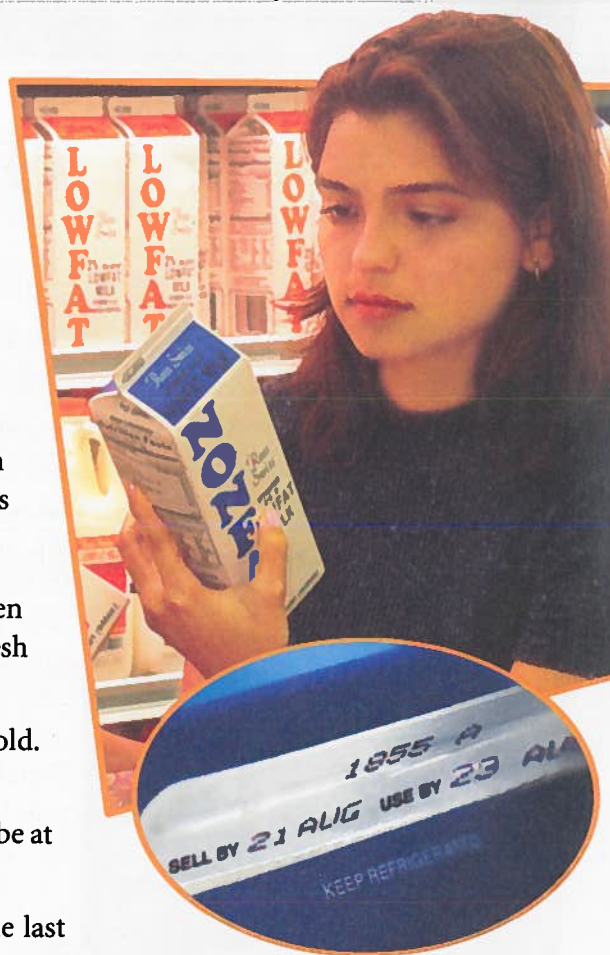
Daily Values How much protein do you eat each day? Do you eat too much saturated fat? To help you answer these questions, nutritionists have developed a tool called Daily Values. **Daily Values** are recommendations that specify the amounts of certain nutrients that the average person should obtain each day. Daily Values are only a general guide because they are calculated for the average person who consumes a total of 2,000 calories a day. Rapidly growing adolescents, for example, may need more nutrients than the Daily Values indicate. Other factors that affect nutrient needs include age, sex, heredity, and activity level.

When you buy a food, the food label lists the percent Daily Value for each nutrient in that food. For example, the food label on a package of crackers might indicate a percent Daily Value for iron of 12 percent. This means that one serving of the crackers provides 12 percent of the iron that the average person needs each day.

Open Dates The labels on prepared foods also include open dates. These dates give you an idea of how long the food will be fresh and safe to eat.

- ▶ The “sell-by” date tells you the last date the product can be sold. You can still use a product after the sell-by date.
- ▶ The “best-if-used-by” date tells you how long the product will be at peak quality.
- ▶ The “do-not-use-after” date is the expiration date. This is the last date you should consume the product.

FIGURE 3 This container of milk lists both a sell-by and a use-by date.



Section 1 Review

Key Ideas and Vocabulary

1. List three main reasons why people eat.
2. What is **hunger**? Distinguish hunger from **appetite**.
3. What is **basal metabolic rate**? How does your basal metabolic rate affect your calorie needs?
4. List three types of information included on a food label to help you evaluate the food.
5. What is meant by percent **Daily Value**? How are Daily Values useful as a guide to eating?

Critical Thinking

6. **Evaluating** How do time and convenience affect the food choices you make? Give two examples.

Health and Community

Natural and Organic Foods Some food manufacturers use the terms “natural foods” and “organically grown” to describe food products. Find out what these claims mean. In a paragraph, offer your opinion about whether these products are healthier than similar products that do not make those claims. **WRITING**

7. **Predicting** How do you think Daily Values for children would differ from Daily Values for the average person? How do you think Daily Values for professional athletes would differ from Daily Values for the average person? Explain.

Reading a Food Label

Before you even enter a supermarket, advertisements in magazines, newspapers, and television try to convince you to buy certain foods.

To judge the nutritional value of a food, do not rely on advertisements or nice-looking packages. Instead, read the food label carefully. The FDA requires packaged foods to be labeled with nutrition information. For foods with more than one ingredient, the FDA also requires that ingredients be listed.



Excellent source of calcium **5**

Nutrition Facts

Serving Size 2.5 oz.
(70 g/about 1/3 Box)
(Makes about 1 cup)
Servings Per Container about 3

| Amount Per Serving | In Box | Prepared |
|--------------------|--------|----------|
| Calories | 260 | 380 |
| Calories from Fat | 25 | 140 |

| | % Daily Value** | |
|-------------------------------|-----------------|-----|
| Total Fat 2.5g* | 4% | 23% |
| Saturated Fat 1.5g | 8% | 20% |
| Trans Fat 0.5g | | |
| Cholesterol 10mg | 3% | 3% |
| Sodium 600mg | 25% | 32% |
| Total Carbohydrate 48g | 16% | 16% |
| Dietary Fiber 1g | 4% | 4% |
| Sugars 7g | | |

| Protein 9g | | |
|------------|-----|-----|
| Vitamin A | 0% | 15% |
| Vitamin C | 0% | 0% |
| Calcium | 20% | 25% |
| Iron | 10% | 10% |

*Amount in unprepared product
**Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

| | | Calories 2,000 | 2,500 |
|--------------------|-----------|----------------|---------|
| Total Fat | Less than | 65g | 80g |
| Sat Fat | Less than | 20g | 25g |
| Cholesterol | Less than | 300mg | 300mg |
| Sodium | Less than | 2,400mg | 2,400mg |
| Total Carbohydrate | | 300g | 375g |
| Fiber | | 25g | 30g |

1
INGREDIENTS:
ENRICHED MACARONI PRODUCT (WHEAT FLOUR, NIACIN, FERROUS SULFATE [IRON], THIAMIN MONONITRATE [VITAMIN B1], RIBOFLAVIN [VITAMIN B2], FOLIC ACID); CHEESE SAUCE MIX (WHEY, MILKFAT, MILK PROTEIN CONCENTRATE, SALT, CALCIUM CARBONATE, SODIUM TRIPOLYPHOSPHATE, CONTAINS LESS THAN 2% OF CITRIC ACID, SODIUM PHOSPHATE, LACTIC ACID, MILK, YELLOW 5, YELLOW 6, ENZYMES, CHEESE CULTURE)

1 Read the ingredients list.

- ▶ Notice that ingredients are listed in order by weight, from most to least.
- ▶ Become familiar with terms for different kinds of ingredients. For example, words ending in *-ose* are often names of sugars.
- ▶ Check for food additives, such as artificial sweeteners (aspartame, sucralose) and preservatives (BHA, BHT, sulfites). Also check for other additives, such as food dyes.
- ▶ Note if the food is enriched (lost nutrients have been restored) or fortified (nutrients have been added).
- ▶ If you have dietary restrictions or allergies, look for those foods on the ingredients list.

2 Note the number of servings per container.

Serving sizes are standardized for more than 100 different food categories. This allows you to compare similar food products by the number of servings they provide.

3 Note the number of calories in one serving.

Keep in mind that daily calorie intake depends on a person's age, sex, weight, basal metabolic rate, and activity level.

4 Look at the percentages of the Daily Values.

- ▶ Note the percentage Daily Values for nutrients that you should limit, such as saturated fat, cholesterol, and sodium. If a food is high in those nutrients, you may want to avoid it.
- ▶ Check the percentage Daily Values for fiber and valuable vitamins and minerals, such as iron and calcium.

Excellent source
of calcium

5 Look for any health or nutrient claims.

Because these claims are regulated by the FDA, they reveal useful information about the product.



Practice the Skill

1. Use the information on the macaroni and cheese label to answer these questions.
 - a. What ingredients are contained in the cheese sauce part of the mix? Which of those ingredients is present in the largest amount?
 - b. What percentage of the Daily Values for saturated fat does one serving contain? If you wanted to eat this macaroni and cheese as part of a balanced meal, should the other foods be high in fat? Explain.
 - c. Do you think that this food would be a good choice for someone on a low-sodium diet? Why or why not?
 - d. Is this food a good source of vitamin C?
2. Compare the food labels for several different breakfast cereals.
 - a. How many different sugars are found in each cereal?
 - b. Which cereal is highest in iron? What percentage of the Daily Value for iron does that cereal provide?
 - c. Which cereal is the most nutritious overall? Explain your choice.

Section 2

Safely Managing Your Weight

Objectives

- ▶ **Examine** how heredity, activity level, and body composition influence a person's weight.
- ▶ **Calculate** your body mass index.
- ▶ **Identify** health problems associated with being overweight and underweight.
- ▶ **Summarize** strategies for losing or gaining weight.

Vocabulary

- body composition
- body mass index (BMI)
- overweight
- obesity
- underweight
- fad diet

Warm-Up

Health Stats What health trend do these statistics reveal?

In 1965, 4.6% of teens were overweight.

In 1980, 5.0% of teens were overweight.

Today, 16.1% of teens are overweight.

WRITING What changes might help reverse this trend? How successful do you think the changes would be?



What Weight Is Right for You?

Cassie and her best friend, Ramona, are the same height. Although Cassie weighs 20 pounds more than Ramona, both girls have a weight that is appropriate for them. Ramona is small-boned, while Cassie has a larger bone structure. In addition, Cassie is more athletic than Ramona.

A person's weight is determined by various factors, including heredity, level of activity, and body composition. The weight that is right for you is the weight that does not present any health risks. A doctor or nutritionist can help you determine what weight is right for you.

Heredity You may have heard the expression, "it runs in the family." This expression means that certain traits are inherited and, therefore, appear regularly among family members. In the case of body weight, there is a link between body weight and heredity. This does not mean that you are "stuck with" a certain weight just because of your family history. It just means that you may have a natural tendency toward a certain weight.

Connect to YOUR LIFE

What kinds of weight trends have you noticed in families you know?

Activity Level More important than family history in determining your weight is your activity level. The more active you are, the more calories you burn. If you are less active, you need fewer calories. Maintaining a healthy weight requires an energy balance. The number of calories consumed must equal the number of calories burned.

Tipping the energy balance can result in weight gain or weight loss. One pound of body weight is equivalent to 3,500 calories. If you take in 3,500 calories more than you burn, you gain a pound. You can gain a pound in two weeks by consuming only 250 extra calories a day. That's the number of calories in a small order of fast-food French fries.

Body Composition Another factor that affects weight is body composition. **Body composition** is a measure of how much body fat you have, as compared to muscle and bone. Remember Cassie and Ramona? Their body compositions were different—Cassie had more muscle mass than Ramona. One reason Cassie weighed more is that a given amount of muscle weighs more than an equal amount of fat. Strengthening exercises, such as lifting weights, can actually increase your weight as you build muscle.

Body composition is also affected by sex and age. Women tend to have more body fat and lower muscle mass than men. Body fat increases with age, while muscle mass decreases.

Body Mass Index

One simple way to assess whether your weight falls within a healthy range is to calculate your body mass index. **Body mass index (BMI)** is a ratio of your weight to your height. The following equation expresses this ratio.

$$\text{BMI} = \left(\frac{\text{Weight (in pounds)}}{[\text{Height (in inches)}]^2} \right) \times 703$$

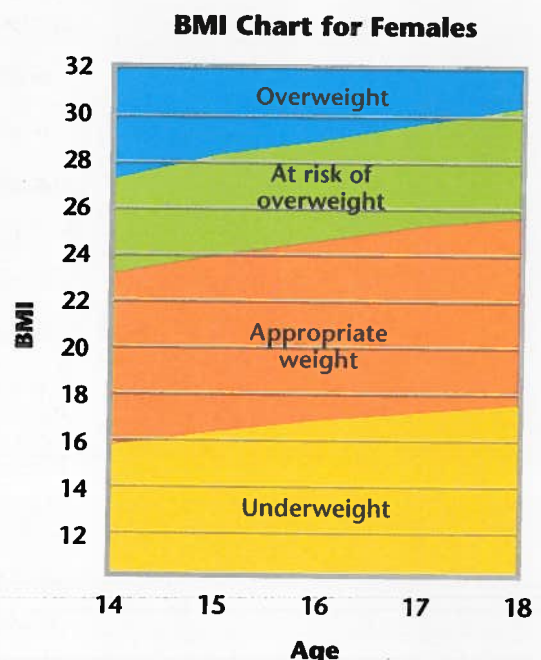
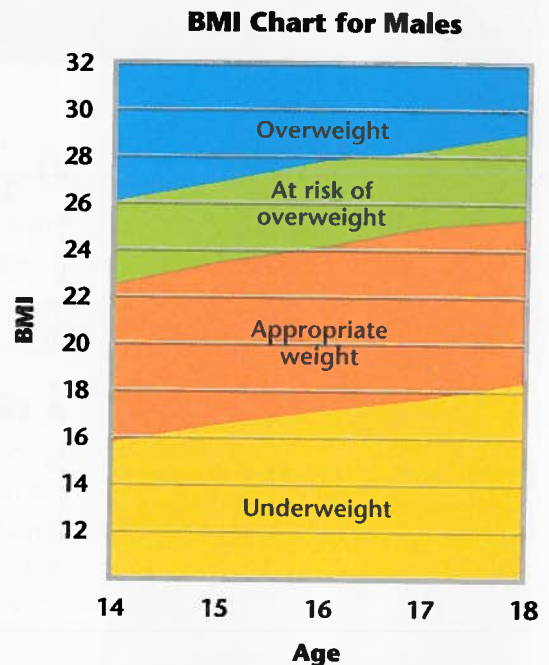
Follow these steps to calculate your BMI.

1. Multiply your height (in inches) by your height (in inches).
2. Divide your weight (in pounds) by the number from Step 1.
3. Multiply the number from Step 2 by 703.

Although your BMI may be very different from your friend's, both of you may fall within a healthy range. You can use Figure 4 to assess your BMI. Notice that the BMI charts for teens take into account both age and sex. This is because teens are still growing. Also, males and females grow at different rates.

FIGURE 4 Your BMI is one way to assess whether your weight falls within a healthy range.

Calculating Calculate your BMI, and compare it to the chart for your sex and age. **MATH**



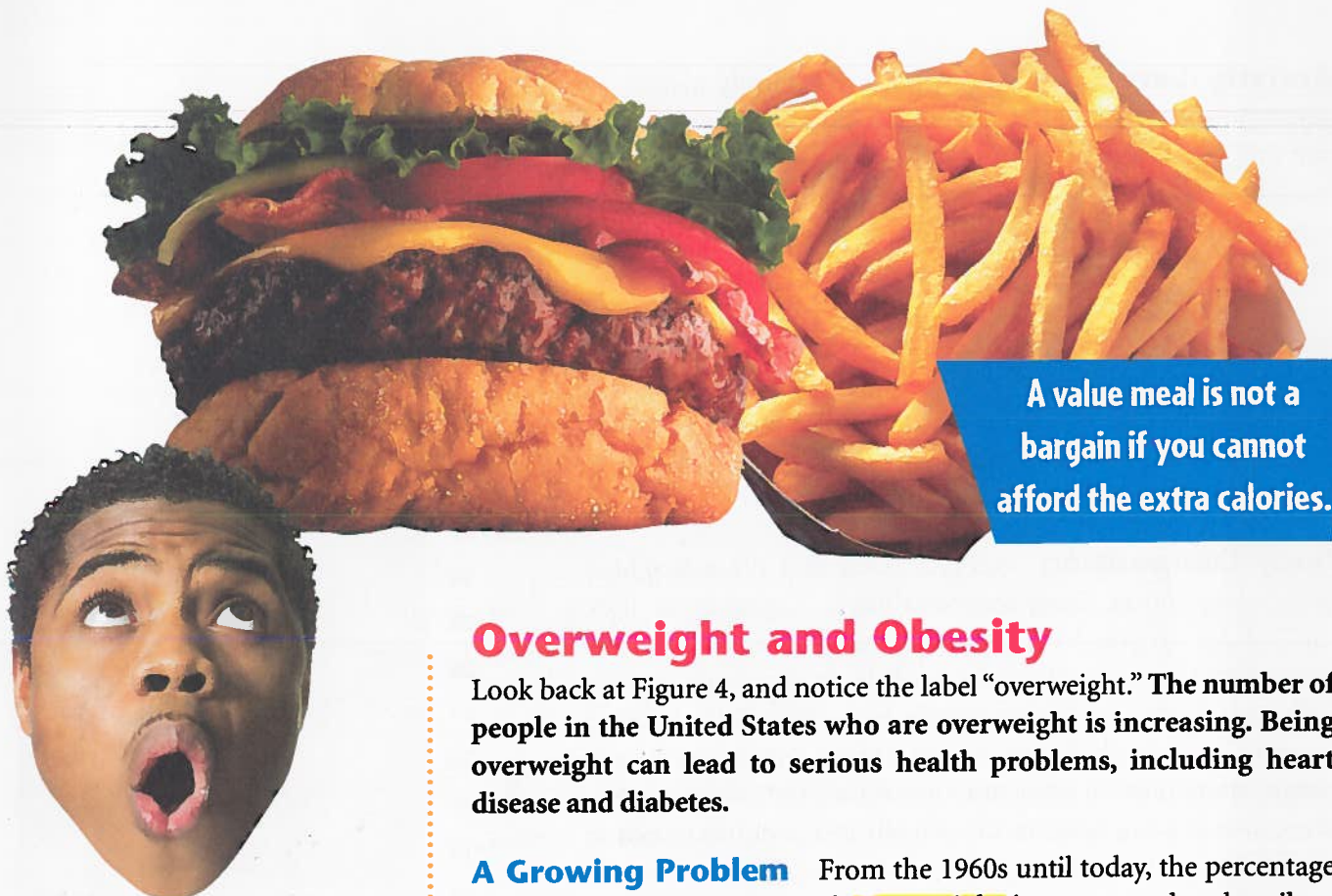


FIGURE 5 One reason for the increase in calorie consumption is that portion sizes have increased dramatically.

Overweight and Obesity

Look back at Figure 4, and notice the label “overweight.” The number of people in the United States who are overweight is increasing. Being overweight can lead to serious health problems, including heart disease and diabetes.

A Growing Problem From the 1960s until today, the percentage of overweight teens has tripled. **Overweight** is a term used to describe a person who is heavier than the standard for the person’s height. You may have heard the term *obesity* used interchangeably with *overweight*. This is not accurate. **Obesity** (oh BEE sih tee) refers specifically to adults who have a BMI of 30 or higher.

More people are overweight today because calorie consumption has increased at the same time that calorie use has decreased. More calories are being consumed by people today because

- ▶ grocery stores offer more food choices, including many prepared foods
- ▶ more meals are eaten outside the home
- ▶ portion sizes have increased

Recall that calorie use is related to activity level. People today burn fewer calories because they

- ▶ are less active at school, work, and in their leisure activities
- ▶ rely more on technological devices, such as cars and computers

Health Risks Overweight people tend to develop several conditions that can lead to health problems. Two conditions are high blood pressure and excess cholesterol in the blood. A third condition, excess glucose in the blood, is associated with type 2 diabetes. Type 2 diabetes is a disease in which the body does not properly use insulin, a substance that controls blood glucose levels. Other health problems associated with being overweight include heart disease, stroke, and certain cancers.

What You Can Do Prevention is the key to avoiding the health problems associated with being overweight. It is easier to prevent weight gain than it is to take off excess pounds. Healthy eating and regular exercise can help you avoid becoming overweight in the first place.

If you are overweight, don't be discouraged. You are still growing, and your BMI may decrease as your height increases. Remember also that changing your habits can be easier when you are in your teens than when you are older. Setting goals to improve your diet, reducing portion sizes, and increasing your activity level can help you lose weight.

Underweight

The BMI charts in Figure 4 also identify people who are "underweight."

Underweight is a term used to describe a person who is lighter than the standard for the person's height. Remember that some people are naturally thinner than others. In addition, some teens are very thin as they are growing. Eventually, as their growth rate slows, they start to put on weight.

Health Risks Thinness in itself is not a health problem unless it is excessive. However, underweight people should be checked by a doctor. **Being underweight can be linked to health problems, such as anemia, heart irregularities, and trouble regulating body temperature.**

What You Can Do First of all, be patient. As you mature, there probably will come a time when your weight will start to increase. Remember, too, that healthy eating and exercise are as important for putting on weight as they are for taking off weight.

Connect to YOUR LIFE

List five things you did this week to help manage your weight.

Go Online
HEALTH
LINKS.

For: Updates on food and diet
Visit: www.SciLinks.org/health
Web Code: ctn-3092

FIGURE 6 No matter if you are underweight, overweight, or at an appropriate weight, exercise is important for staying fit and healthy.



Evaluating Diet Plans

New diets seem to be everywhere—in magazines, on the Internet, in TV infomercials, and in best-selling books. Do these diets live up to their claims? Are they good for your health? Use this checklist to evaluate a diet.



Does the diet provide fewer than 1,200 calories a day?

Yes

No

Does the diet cut out fats, carbohydrates, or proteins?

Yes

No

Does the diet promise rapid weight loss in a short amount of time (more than 1 or 2 pounds per week)?

Yes

No

Does the diet ignore the need for long-term changes in eating habits?

Yes

No

Does the diet ignore the need for regular exercise?

Yes

No

“Yes” answers to one or more questions may indicate a diet that is unlikely to work. What’s worse, the diet could harm your health in the long term.

Activity

Choose a diet plan that you have seen advertised or have read about. Use the checklist to evaluate the diet. Then write a paragraph evaluating the diet plan. **WRITING**

Healthy Weight Management

There is no magic method for keeping your weight within a healthy range. Whatever your weight is, weight management should be part of your daily habits. **Sensible weight management involves avoiding dangerous diet plans, choosing nutritionally balanced meals and snacks, and getting regular exercise.**

Dangerous Diet Plans Most people who want to lose or gain weight want to do so very quickly. They may rely on strategies that promise quick results in a short period of time. Many of these approaches are unrealistic and can be unsafe.

- ▶ **Fad Diets** A **fad diet** is a popular diet that may help a person lose or gain weight but without proper regard for nutrition and other health issues. One example of a fad diet is a “high-protein, low-carbohydrate diet.” Another example is a diet that includes a specific product that is supposed to burn fat.

Because fad diets often exclude important nutrients, they can put a dieter’s health at risk. In addition, the weight loss achieved with a fad diet is usually temporary. Because fad diets often severely restrict food choices, people become bored with the diet’s limitations. As a result, they stop dieting and return to their original eating habits.

► **Diet Aids** Diet aids include pills and candies that are supposed to suppress appetite. These diet aids are usually not effective, especially for long-term weight control. Also, diet aids can be habit-forming and cause unwanted side effects. For example, the main ingredient in many diet pills is caffeine, which may cause nervousness, sleeplessness, and high blood pressure.

► **Fasting** Some people fast, or refrain from eating, as a way to lose weight. Fasting for more than a brief period can lead to health problems. The body begins to break down muscle tissue to obtain the nutrients it needs. Long-term fasting may stunt your growth, put a strain on your kidneys, and cause hair loss. Fasting has also been linked with irregular menstrual periods in girls and women.

Sensible Weight Loss Losing weight sensibly and safely requires thought, planning, and patience.

► **Recognize Eating Patterns** Before you start a weight-loss program, keep a diary of your current eating habits. Record the foods that you eat and when you eat them. Also record any thoughts or feelings you have just before eating. As you review your diary, you may discover eating patterns you were not aware of. You may even identify triggers for overeating, such as boredom or stress.

► **Plan Helpful Strategies** Do not try to lose weight too fast. Remember that it took awhile to put on the weight. Change your eating habits gradually—your weight-loss program will be more successful in the long run. Figure 7 suggests some strategies to help you eat sensibly while losing weight.

► **Exercise** Your weight-loss program will be far more effective if you exercise. If you decrease your calorie intake but do not exercise, your basal metabolic rate goes down. As a result, your body will not burn calories as efficiently as it did before. Weight loss may slow down or stop even though you are still consuming fewer calories.

**Connect to
YOUR LIFE**

What emotions and behaviors trigger your desire to eat?

Weight-Loss Strategies

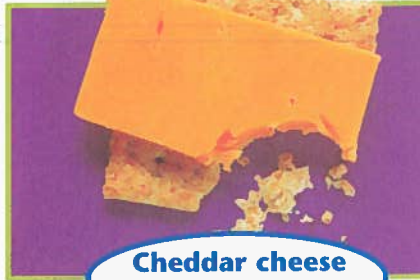
- Eat smaller portions.
- Eat your food slowly to enjoy its taste.
- Try not to eat while watching TV or reading.
- Take a walk instead of eating when you are bored.
- If you overeat occasionally, do not become upset. Just return to your sensible eating habits.



FIGURE 7 A successful weight-loss program combines sensible eating with regular exercise. Exercise helps your body burn calories more efficiently.



Frozen yogurt



Cheddar cheese on crackers



Trail mix

FIGURE 8 If you are trying to gain weight, snack on nutrient-dense foods such as the ones shown here.

Applying Concepts List some other healthy nutrient-dense snacks.

Sensible Weight Gain A sensible plan for gaining weight is not unlike that for losing weight. The difference is that you need to *increase* your calorie intake while making sure to eat a balanced diet and to exercise. Here are some tips for changing habits that may be preventing you from gaining weight.

- ▶ Avoid snacks right before mealtimes because they could spoil your appetite.
- ▶ When you do snack, choose nutrient-dense foods that are high in calories. Figure 8 shows some good snack choices.
- ▶ Don't increase your fat intake over what is recommended in the MyPyramid plan. Doing so can lead to other health problems.
- ▶ Try not to skip meals.
- ▶ At mealtimes, take bigger helpings of food than usual.
- ▶ While you are increasing your caloric intake, do not neglect exercise. Exercising will help you maintain fitness and gain healthy muscle mass.

Section 2 Review

Key Ideas and Vocabulary

1. Briefly describe how heredity, activity level, and body composition can affect a person's weight.
2. What is the formula for calculating body mass index? What does it mean for someone to have a healthy body mass index?
3. What are two diseases associated with being overweight? What health risks are associated with being underweight?
4. What is a **fad diet**? Describe two problems associated with fad diets.
5. Why is exercise an important part of a weight-loss program? Why is exercise also important for gaining weight?

Health at Home

Lunch-Time Options List some healthy lunch-time foods and snacks that students who are trying to lose weight can bring to school from home. Be creative—include some nontraditional foods on your list. Then design a poster that illustrates your suggestions.

Critical Thinking

6. **Applying Concepts** Many people have an unrealistic expectation of what their appropriate weight should be. What factors might contribute to their misconception?
7. **Evaluating** Being overweight is more common in the United States than in many other countries. Why do you think this is the case?

Nutrition for Individual Needs

Section 3

Objectives

- ▶ **Examine** how diabetics, vegetarians, people with food sensitivities, and athletes can meet their nutritional needs.

Vocabulary

- vegetarian
- vegan
- food allergy
- food intolerance
- carbohydrate loading

Warm-Up



Dear Advice Line,

I've recently become a vegetarian, and it has my parents worried. They think I'm not getting enough nutrients, and they keep telling me that I have to eat meat to be healthy. How can I explain to them that a vegetarian diet can be healthy?

WRITING Write a response to this teen to help solve the problem.

Diets for Diabetics

People's circumstances may call for special diets. **Diabetes is a disease with dietary requirements that can help people manage their condition.**

Recall that one of the risks of being overweight is type 2 diabetes, a condition in which the blood contains high levels of glucose. Type 2 diabetes was once thought of as an adult disease. However, it is becoming more common in adolescents because of poor nutritional habits, such as eating too much sugar and fat.

Diabetes can be a life-threatening condition, so it is important for people to keep their diabetes under control. In addition to other treatments, diabetics can help control their disease by making changes in their diets. Here are some eating tips for diabetics.

- ▶ Eat balanced meals and snacks on a regular schedule.
- ▶ Keep track of your carbohydrate intake. You can replace some carbohydrates with foods that are high in unsaturated fats, such as peanut butter and almonds. If you have a sugary treat, avoid other carbohydrates that day.
- ▶ Control your weight. In addition to dietary changes, be sure to get regular exercise.

Connect to YOUR LIFE

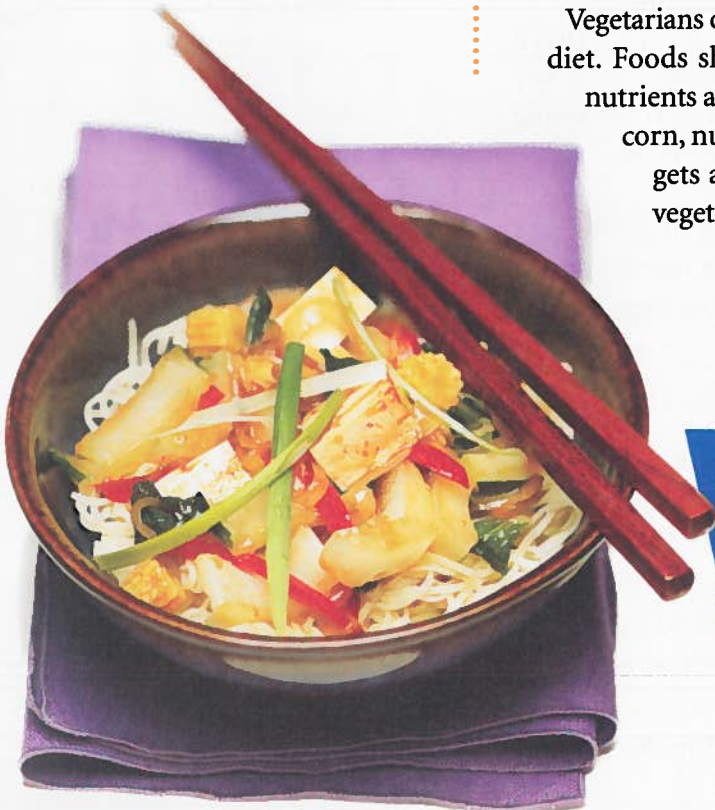
How could you help a diabetic friend make the necessary changes in his or her diet?

For: More on meals for individual needs

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FIGURE 9 Protein combinations such as tofu with pasta or rice are good choices for vegetarian meals. Vegetarians who eat foods from animal sources can also get protein from milk products and eggs.



Vegetarian Diets

A person who does not eat meat is called a **vegetarian**. Some vegetarians, called **vegans**, eat no food from any animal source. Other vegetarians, however, include eggs and dairy products in their diets. **Because vegetarians exclude certain foods from their diets, they need to plan their food choices carefully to avoid potential health risks.**

Benefits of a Vegetarian Diet More people are turning to vegetarian diets because of the health benefits. Vegetarians tend to have a lower BMI than other people. In addition, vegetarians may have a lower risk of heart disease, which can result from eating too much animal fat. Vegetarians also tend to have lower blood pressure and a lower risk of type 2 diabetes.

Risks of a Vegetarian Diet As you learned in Chapter 8, animal products such as milk, eggs, and meat are complete proteins because they contain all the essential amino acids. Plant products, however, are incomplete proteins. Vegetarians who eat no food from animal sources must make sure that their diets contain all the essential amino acids. Vegetarians must also make sure to obtain adequate supplies of vitamins and minerals.

Some risks associated with a vegetarian diet are

- ▶ inadequate intake of vitamin B12, which is found primarily in animal products. Lack of vitamin B12 can result in nerve damage.
- ▶ lack of adequate calcium, which can lead to bone loss.
- ▶ protein deficiency, which can result in hair and muscle loss.

Vegetarians can reduce their risk of health problems by eating a varied diet. Foods should be rich in vitamins and minerals or have those nutrients added. When eaten daily, foods such as brown rice, beans, corn, nuts, seeds, and whole grains help ensure that a vegetarian gets all the essential amino acids. Tofu and dark, green leafy vegetables are good sources of calcium for vegetarians.

Some Complete Protein Combinations

- Peanut butter on a whole-wheat bagel
- Refried beans on a corn tortilla
- Split pea soup with rice cakes

Food Sensitivities



Sensitivity

Symptoms

Common Causes

Food allergy

Coughing, sneezing, vomiting, headache, rash, swelling, breathing difficulty, drop in blood pressure

Peanuts and other nuts, eggs, milk, soy, fish, shellfish, wheat and other grains, fruits, vegetables

Food intolerance

Rash, stuffy or runny nose, headache, anxiety, tiredness, inability to concentrate, digestive problems (cramping, diarrhea, vomiting), weight loss or gain, malnutrition

Milk products, chocolate, wheat, food additives, eggs, strawberries, citrus fruits, tomatoes



Food Sensitivities

Do you know people who itch after eating strawberries or get a stomach ache from ice cream? Reactions like these may be due to food sensitivities. **People with food sensitivities, which include food allergies and food intolerances, may require special diets.**

Food Allergies A **food allergy** is a response by your immune system to the proteins in certain foods. Some common foods associated with food allergies are listed in Figure 10. An allergic reaction is usually fast and intense. In severe cases, the tongue swells, breathing becomes difficult, and blood pressure drops. This type of reaction requires emergency treatment.

Food labels sometimes contain statements, such as “may contain traces of peanuts.” If you are allergic to peanuts, be careful to avoid such foods. Fortunately, food allergies are rare. In children, the frequency ranges from 4 to 8 percent. In adults, it is about 2 percent.

Food Intolerances Food intolerances are more common than food allergies. A **food intolerance** is an inability to digest a particular food or food additive. Symptoms of food intolerance may be slower to appear and harder to recognize than those of a food allergy. Figure 10 lists symptoms and foods associated with food intolerance.

Figuring out which food is causing a food intolerance reaction can take months. The person must eliminate foods from the diet one at a time until symptoms disappear.

Connect to YOUR LIFE

What are some ways you could help a family member deal with a food intolerance?

FIGURE 10 Food allergies are quick responses by the immune system to certain foods. Allergic reactions may require medical treatment. Food intolerances may not be as serious, but can make a person ill.

Reading Tables Which foods can cause both food allergies and food intolerances?



FIGURE 11 Athletes need a balanced diet with larger portions of food for additional calories.

Healthy Diets for Athletes

A lot of conflicting information has been written about the dietary needs of athletes. However, nutritionists in the field of sports medicine agree on one thing: athletes need a well-balanced diet with the recommended amounts of carbohydrates, fats, and proteins.

Calorie Intake Athletes need to consume extra calories to fuel their higher level of physical activity. Where these calories should come from is a subject of controversy. Many nutritionists state that most of the extra calories should come from an increase in complex carbohydrates. The extra calories should not come from high-fat foods, otherwise athletes risk developing the health problems associated with them. However, athletes should not restrict fat intake to less than that recommended in the MyPyramid plan.

Fluid Intake During competition, athletes should drink plenty of fluids, preferably water, to replace the fluid lost in perspiration. Just how much water athletes need depends on the duration and intensity of the competition. It also depends on weather factors, such as how hot and humid it is. Excessive heat and humidity require higher fluid intake.

Carbohydrate Loading You may have heard about endurance athletes, such as runners, loading up on carbohydrates before a long race. **Carbohydrate loading** is the practice of greatly increasing carbohydrate intake and decreasing exercise on the days immediately before a competition. By doing this, athletes hope to make extra energy available to the muscles during the competition. For marathon runners or other endurance athletes, carbohydrate loading may help supply needed energy. For the average athlete, however, it probably is unnecessary.

Section 3 Review

Key Ideas and Vocabulary

1. How can diabetics control the amount of carbohydrates in their diets?
2. What recommendation would you make to a vegetarian about his or her diet?
3. Why is it important to identify any food sensitivities that you may have?
4. List three diet-related recommendations that athletes should follow.
5. What is **carbohydrate loading**? What do athletes hope to gain from this practice?

Health at School

Vending Machine Snacks Suppose you were choosing snacks to be included in a vending machine at school. What would be some good choices for diabetics? Vegetarians? Student athletes? List your choices and note the reason for each choice. **WRITING**

Critical Thinking

6. **Comparing and Contrasting** How do food allergies differ from food intolerances? Why might it be difficult to distinguish the two?
7. **Evaluating** Suppose an athlete decides to limit his caloric intake to keep his weight down. How could you convince him of the dangers of his decision?

Goals for Healthy Eating List three things you learned about goal-setting from this video.

Section 1 Choosing Food Wisely

Key Ideas

- ✓ You eat for several reasons: to meet your nutritional needs, to satisfy your appetite, and to supply your body with energy.
- ✓ When choosing foods, it is important to read and evaluate the information on the food label. The information includes nutrition facts, nutrient and health claims, Daily Values, and freshness dates.

Vocabulary

- hunger (220)
- appetite (220)
- basal metabolic rate (220)
- Daily Values (223)



Section 2 Safely Managing Your Weight

Key Ideas

- ✓ A person's weight is determined by heredity, level of activity, and body composition.
- ✓ One simple way to assess whether your weight falls within a healthy range is to calculate your body mass index.
- ✓ Being overweight can lead to serious health problems, including heart disease and diabetes.
- ✓ Being underweight can be linked to anemia, heart irregularities, and trouble regulating body temperature.

- ✓ Sensible weight management involves avoiding dangerous diet plans, choosing nutritionally balanced meals and snacks, and getting regular exercise.

Vocabulary

- body composition (227)
- body mass index (227)
- overweight (228)
- obesity (228)
- underweight (229)
- fad diet (230)



Section 3 Nutrition for Individual Needs

Key Ideas

- ✓ Diabetes is a disease with dietary requirements that can help people manage their condition.
- ✓ Because vegetarians exclude certain foods from their diets, they need to plan their food choices carefully to avoid potential health risks.
- ✓ People with food sensitivities, which include food allergies and food intolerances, may require special diets.

- ✓ Athletes need a well-balanced diet with the recommended amounts of carbohydrates, fats, and proteins.

Vocabulary

- vegetarian (234)
- vegan (234)
- food allergy (235)
- food intolerance (235)
- carbohydrate loading (236)



Reviewing Key Ideas

Section 1

- Basal metabolic rate (BMR) can be affected by
 - Daily Values.
 - age.
 - hunger.
 - appetite.
- A Daily Value of 10 percent means that
 - a food consists of 10 percent of a particular nutrient.
 - 10 percent of your calories should come from a particular nutrient.
 - one serving provides 10 percent of the daily amount for a particular nutrient.
 - a food package can bear the nutrient claim "light."
- How might a person's muscle mass affect BMR?
- How does BMR change as a person ages?
- How can a person's cultural background influence his or her diet?
- Critical Thinking** How do you think friends can influence your appetite?
- Critical Thinking** How can reading food labels help you choose between two similar foods?

Section 2

- Body mass index (BMI) is a ratio of a person's weight to his or her
 - age.
 - activity level.
 - height.
 - basal metabolic rate.
- People who are considered overweight
 - are generally healthier than people who are not overweight.
 - are decreasing in number.
 - have a BMI of more than 30.
 - are heavier than the standard for their height.
- Joel has a BMI of 30. Explain how this number was determined and what it means.
- Why aren't fad diets effective for long-term weight loss?
- Why should a person use a diet diary when attempting to gain or lose weight?
- Critical Thinking** Explain why skipping meals is not an effective way to manage your weight.

Section 3

- A food intolerance is
 - a response by the immune system to certain proteins in foods.
 - present in one percent of the population.
 - the inability to digest a particular food.
 - a fast and intense reaction to food.
- How is type 2 diabetes related to diet?
- How can vegetarians make sure they get all the amino acids they need?
- Why is it important for an athlete to increase calorie intake?
- Critical Thinking** How could diabetics benefit from reading food labels? What information should they look for?



Building Health Skills

- Accessing Information** Make a chart in which you compare different types and brands of yogurt. How do they compare for total fat, saturated fat, cholesterol, vitamins, and minerals?
- Advocacy** Tim, who is thin, has started eating a lot of potato chips and other high-fat foods in an attempt to gain weight. What advice would you give him? **WRITING**
- Setting Goals** Calculate your BMI. Determine if you have an appropriate weight, are overweight, or underweight. Plan meals that will increase, decrease, or keep your BMI the same. Try the meals for several weeks, and see if there is any change in your BMI.

Health and Community

Fast-Food Pamphlet Use the Internet to collect the nutrition information supplied by many fast-food restaurants. Use this data to analyze the fat and calorie content of different food items. Then, create a pamphlet comparing two meals: one that is low in fat and calories, and one that is high in fat and calories. **WRITING**



Standardized Test Prep

Math Practice

The food label below is from a box of breakfast cereal. Use the label to answer Questions 22–24.

| Nutrition Facts | | | |
|---|----------------------|---------|---------|
| Serving Size | 1 cup (30g) | | |
| Servings Per Container | About 10 | | |
| Amount Per Serving | | | |
| Calories 110 | Calories from Fat 15 | | |
| | % Daily Value* | | |
| Total Fat 2g | 3% | | |
| Saturated Fat 0g | 0% | | |
| Trans Fat 0g | 0% | | |
| Cholesterol 0mg | 0% | | |
| Sodium 280mg | 12% | | |
| Total Carbohydrate 22g | 7% | | |
| Dietary Fiber 3g | 12% | | |
| Sugars 1g | | | |
| Protein 3g | | | |
| Vitamin A 10% | Vitamin C 20% | | |
| Calcium 4% | Iron 45% | | |
| * Percent Daily Values are based on a 2,000 Calorie diet. Your daily values may be higher or lower depending on your caloric needs: | | | |
| | Calories | 2,000 | 2,500 |
| Total Fat | Less than | 65g | 80g |
| Sat Fat | Less than | 20g | 25g |
| Cholesterol | Less than | 300mg | 300mg |
| Sodium | Less than | 2,400mg | 2,400mg |
| Total Carbohydrate | | 300g | 375g |
| Fiber | | 25g | 30g |

22. How many servings would an average person need to consume to get the total amount of vitamin C needed in a day?
 A 2 B 5
 C 10 D 25
23. What percentage of the calories in one serving comes from fat?
 F about 3 percent
 G about 6 percent
 H about 14 percent
 J about 20 percent
24. If you consume a diet of 2,500 calories per day, what percentage of your Daily Value for fiber would one serving provide?
 A 8 percent
 B 10 percent
 C 12 percent
 D 15 percent

Reading and Writing Practice

Read the passage. Then answer Questions 25–28.

Could a protein called leptin help explain why people gain or lose weight? Working with a genetically obese strain of mice, scientists found that these mice made very little leptin compared to normal mice. Perhaps leptin serves as a signal to the brain to suppress appetite, the scientists hypothesized. But, unlike the obese mice, overweight humans have plenty of leptin in their bodies. Nonetheless, the findings about leptin have opened the door for more research into weight control.

25. Leptin is a
 A protein found only in mice.
 B protein found only in humans.
 C protein found in both mice and humans.
 D medication that increases one's appetite.
26. In this passage, the word *suppress* means
 F increase.
 G reduce.
 H stimulate.
 J maintain.
27. According to the passage, which of these statements is true?
 A Genetically obese mice produce high amounts of leptin.
 B Normal mice produce very little leptin.
 C Thin people produce very little leptin.
 D Overweight people produce plenty of leptin.

Constructed Response

28. In a paragraph, explain the scientists' findings about leptin in mice and in humans.

Test-Taking Tip

Before taking a test, become familiar with its format, including the different question types. One way to do this is to complete practice tests.