

Lesson 6

Controlling Fat

Chapter 1



Key Words

additives	hunger
appetite	hypoglycemia
basal metabolic rate (BMR)	insulin
carbohydrate loading	leavening agent
diabetes mellitus	obesity
emulsifier	preservatives
enriched	product date
essential fat	storage fat
fasting	unit price
fortified	vegetarian

What You Will Learn to Do

- Estimate your body fat content

Linked Core Abilities

- Take responsibility for your actions and choices

Skills and Knowledge You Will Gain Along the Way

- Identify the risks of obesity
- Explore tendencies that encourage fat accumulation
- Define current and desired state for healthy lifestyle
- Identify steps that can lead to a lean body fat content
- Relate food intake and physical activity to weight control
- Define the key words contained in this lesson

Introduction

In today's society, obese and overweight people, young and old, seek corrective advice from all types of organizations and individuals. These "experts," for many reasons, attempt to encourage and control what we eat, how we eat, when we eat, how much of what we eat, etc.

In this lesson, you learn how it is possible, without difficulty, to carry an amount of fat that is helpful and encourages the dynamic living principle. You will see in the simplest terms a method designed to keep you healthy and promote enjoyment of living while participating in life to your fullest potential.

Fat Control

When you are obese or overweight, you increase your risk of cardiovascular disease, high blood pressure, gall bladder disease, diabetes, and certain types of cancer. It also prevents you from performing actively at your highest potential and raising your self-esteem and self-assurance.

Determining whether you are obese or overweight is not dependent on how much you weigh on a scale. All of us have our own unique and special body types, which include our inherited strengths and weaknesses and tendencies that encourage accumulation of fat in our formative years, such as the following:

- Family eating habits
- A tendency to develop more fat cells
- A large skeletal structure
- Any number of unproved theories passed down through the years

To ensure that you follow a proper and proven method for obtaining a healthier lifestyle, we will present you with a few guidelines on learning how to control your fat intake.

The steps to controlling body fat are a combination of restricting your fat intake, adequate exercise, making the right food choices, and understanding how to measure your body fat and how to use that information in your overall wellness program.

Step 1: Restricting Your Fat Intake

Most of us are continually trying to lower our body fat. When you diet, the body says you need to store more fat instead of less fat. This causes, especially in females, the body to slow down, which reduces the fat burning enzymes. Therefore, with each diet you undertake, the body reduces more fat burning enzymes, making it harder for you to lose fat. But remember, fat levels that drop too low are also unhealthy and unsafe. A certain amount of **essential fat** is necessary to maintain the bodily functions discussed earlier.

Key Note Term

essential fat – fat that the body needs in certain amounts to maintain bodily functions

For example, most women should not go below eight percent, as this would upset the menstrual cycle, the ability to conceive children, and eventually hormonal balance. In men, the lower limit is approximately three to four percent.

Storage fat, on the other hand, is our fat reserve that can become a problem for many of us. Women in general seem to have a greater propensity to store fat. The reason for this is probably estrogen, which increases the fat-storing capability. Evidence points to the hips, thighs, and buttocks as the body's most desirable storage areas.

The following are ratings of body fat percentages by age and gender:

Males ages 18 to 30:		Females ages 18 to 30:	
Athletes	6–10%	Athletes	10–15%
Good	11–14%	Good	16–19%
Acceptable	15–17%	Acceptable	20–24%
Possibly needs help	18% and over	Possibly needs help	25% and over
	(Obese/Overweight)		(Obese/Overweight)

The average-weight adult has approximately 25 to 30 billion fat cells, whereas the average overweight adult has between 60 to 100 billion. Some overweight people can have as many as 200 billion. Many factors are responsible for the development of these fat cells. Despite all the reasons, a person's growth and/or activities may or may not use all of the foods, or calories, consumed. The body will store the non-used calories as fat. For maximum benefit, keep saturated fat to a minimum. Count your total fat intake over a seven-day period. If you foul up, just cut back the next day.

When your fat content is where you desire, the next step is to develop a lifetime guideline for healthy eating. Calculate your daily intake of carbohydrates, fats, and proteins (as you did in the Journal Exercises in the previous lessons). Then choose one of the following plans and stick to it. The two plans that best enhance the dynamic living profile are #2 and #3. Whichever plan you select will require an effort on your part to make it succeed; but it will work and you can enjoy the benefits of that change.

Plan #1 (Average American Diet)		Plan #2 (The New American Diet)	
Fat	37–42%	Fat	20%
Saturated Fat	12–15%	Saturated Fat	6%
Protein	10–15%	Protein	10–15%
Carbohydrates	40–45%	Carbohydrates	60–65%
Plan #3 (The Lifetime Eating Plan)		Plan #4 (U.S. Dietary Goals)	
Fat	10%	Fat	30%
Saturated Fat	Low	Saturated Fat	10%
Protein	10–15%	Protein	10%
Carbohydrates	75–80%	Carbohydrates	60%

Key Note Term

storage fat – fat that the body keeps in reserve that can lead to excess fat problems or obesity

Step 2: Exercise—How the Body Burns Food (Calories/Energy)

In addition to eating a healthy diet, you must follow an exercise program to maintain a lean body fat content. Balancing how many calories you consume with how many calories your body burns daily is the key to maintaining body fat content and weight. People gain body fat when they consume more calories daily than their bodies use for energy. Keep in mind that one pound of body fat contains approximately 3,500 calories. Therefore, if a person wants to lose a pound of body fat in one week, he or she must burn 3,500 calories more than he or she consumes over the course of the week.

Your body burns calories even when it is at complete rest. **Basal metabolic rate (BMR)** is the number of calories burned at complete rest, and it varies based on age, health, and body size, shape, and weight. For example, after age 25, most people's BMR decreases approximately 1 percent because their requirements for energy slow down. In addition to your BMR, your body burns calories through muscle activity; and while you do not have much control over your BMR, you do have control over the amount of physical activity in which you participate. Obviously, the more active you are, the more calories you use.

Choose an exercise program that accomplishes the two goals of improving your heart and lungs, as well as working your muscles. You can increase the efficiency of the heart and respiratory system through exercises such as jogging, swimming, and biking that increase the heart rate and maintain it for a set period of time. The time will vary based on your age, abilities, and the exercise being performed.

The second goal of working your muscles includes toning your muscles and/or increasing your muscle size and improving your muscle strength. Because muscle burns more energy than fat, the more muscle tissue you have, the more calories you burn. This is also true of your BMR, meaning that even at rest, the more muscle mass you have, the more energy your body will burn. You can work your muscles through weight training and exercises such as push-ups and sit-ups.

Step 3: Food Control and Choice

People eat for many different reasons: they feel hungry, the time of day, they missed a meal, or they are following their families' eating routine. Whatever the reason to eat at any given time, it is the choice of food that will truly make the difference in whether you will develop an overweight problem or maintain the dynamic living profile.

The food groups at the bottom half of the Food Guide Pyramid, which you learned about in previous lessons, are foods that you should eat three or more times daily. Do not hesitate to eat plenty of these foods freely. The foods you should be eating daily are as follows:

- **Vegetables.** Fresh, steamed, or microwaved with lots of carrots, broccoli, cabbage, brussels sprouts, kohlrabi, Swiss chard, and cauliflower (anticarcinogenic properties).
- **Fruits.** Lots of oranges, apples, apricots, peaches, and grapefruit (vitamin C).
- **Breads, cereals, rice, and pasta.** Lots of stone ground and low fat breads and cereals (vitamin E).

Key Note Term

basal metabolic rate – the number of calories burned at complete rest; measurement of it indicates an individual's general metabolism or state of health

The Food Guide Pyramid is an outline of what to eat daily. It is not a rigid prescription; it is a general guideline developed by the U.S. Department of Agriculture that will let you choose a healthful diet that is right for you. The Pyramid calls for eating a variety of foods to obtain the nutrients you need and at the same time the right amount of calories to maintain a healthy weight. For example, the base of the Food Group Pyramid shows you should eat 6 to 11 servings of grain based foods each day. A slice of bread generally equals 1 serving. These foods provide carbohydrates (starches), which are an important source of energy, especially in low-fat diets.

Step 4: Measuring Your Body Fat

This section presents two fairly accurate methods of measuring your body fat. Follow the directions and do not be discouraged. Body types differ, and you are your own special person.

Pinch an Inch Test

Remember, your body does not need large amounts of fat. When your storage, or reserve, fat begins to melt away, you can determine the right level by using the “pinch an inch” test as a simple method of measuring and maintaining your body’s fat.

You can perform the “pinch an inch” test by pinching the skin fold of your triceps (women only), waist, or thighs between your fingers. If the fat is over an inch between your thumb and forefinger, you might consider continuing your fat control program.

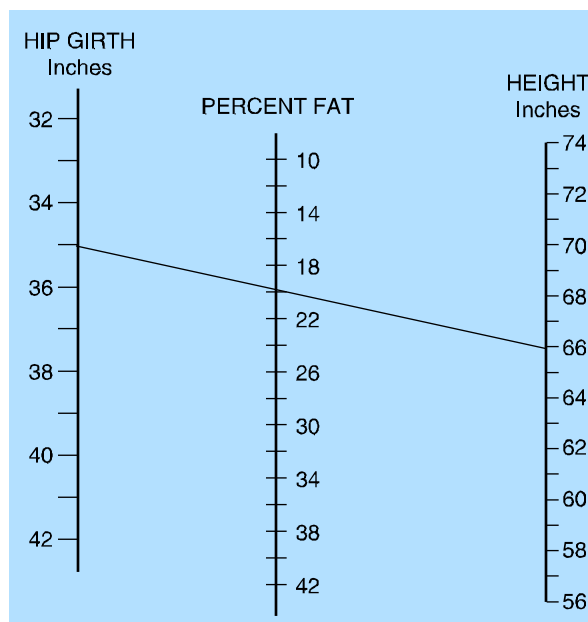
Estimating Body Fat

Jack H. Wilmore, an exercise physiologist at the University of Texas in Austin, created the following ways to measure body fat.

Women: Measure the circumference of your hips at the widest point and plot that measurement and your height on the chart in Figure 1.6.1. Then, using a straight

Figure 1.6.1: Estimating body fat for women.

Courtesy of CACI and the U.S. Army.



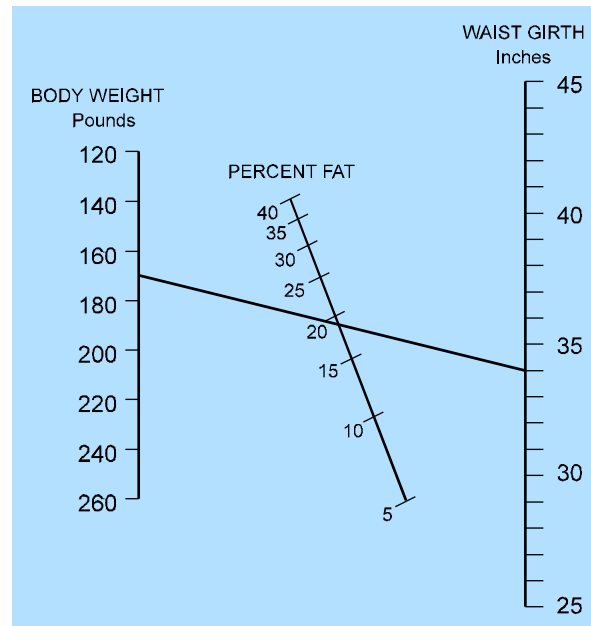


Figure 1.6.2: Estimating body fat for men.

Courtesy of CACI and the U.S. Army.

edge, draw a line connecting the two plots. Your body fat percentage is where the line crosses the percent fat column. Refer to the appropriate chart in Step 1 to see if your fat content is acceptable, good, athletic, or needs help.

Men: Refer to Figure 1.6.2 and measure the circumference of your waist at the exact level of the belly button, making sure to keep the tape perfectly horizontal. Plot that measurement and your weight on the chart at the top of the next column. Then, using a straight edge, draw a line connecting the two plots. Your body fat percentage is where the line crosses the percent fat column. Refer to the appropriate chart on in Step 1 to see if your fat content is acceptable, good, athletic, or needs help.

The Road to Fat Control

A 1992 Consumer Reports survey with 68 nutrition experts indicated a deepening concern over America's dietary habits and implicated the leading causes of death as being associated with eating and drinking. The causes of death are coronary artery disease (heart attack), cancer, cerebral vascular disease (stroke), diabetes, liver disease, bowel disorders, and osteoporosis.

The 68 experts agreed on a reasonable diet for the American people as one that closely resembles the dietary guidelines set forth by the U.S. RDI and the Department of Health and Human Services. Additionally, the experts were much more deliberate in defining an "ideal" diet as one that maximizes the immune system, reduces the risk of disease, and minimizes the process of aging.

By understanding the experts' opinions and responses, you can develop a formula that promotes a healthier lifestyle. If used properly, this formula can improve your immune system and risks against the leading causes of death, keep your body fat at a healthy level, and enhance your potential to maintain an ideal body fat content for life.

Carbohydrates: How to Eat Them

A definition of natural foods is one that fits the carbohydrate category perfectly. Natural foods are foods that are as unrefined as possible and free from additives and preservatives. Fruits, vegetables, and grains in their natural state are the key elements to a maximized immune system and a body fat content that will maintain itself for a lifetime.

There is growing evidence that a diet rich in fruits, vegetables, and grains will reduce the risk of certain cancers. Such a diet will also protect the heart and bones from early breakdown and infirmity, which limit millions of Americans from enjoying their potential.

The experts recommend at least seven servings of fruits and vegetables and six servings of grain products a day. To be realistic in our hurry-up lifestyles, this may not be possible. However, evidence supports eating small amounts of these natural products several times a day for maximum benefit.

If you can consume 60 to 80 percent of your calories from the carbohydrate group, you will be able to control your body fat much easier. There are two main reasons why this is so important: There are only 4 calories per gram in carbohydrates and, to store carbohydrate as storage fat, it takes 23 calories out of each 100 calories eaten. That means you can consume more food and still maintain a lean body fat content.

This dieting regimen will enable you to receive all the fiber you need (20 to 35 grams a day) without worrying about supplemental fiber. Plus, there is also room to enjoy a sweet treat. But remember, look at the label and keep the fat content for the sweet to nearly zero.

Protein: Don't Worry

If you are eating the recommended amounts of carbohydrates in a diversified manner, tests indicate you will receive your complete protein needs without concern. Most of your protein (about 85 to 90 percent) should come from plant sources or the complex carbohydrates. Studies indicate that populations eating a high degree of protein coming from animal products (as are the Americans with 70 to 75 percent) will have a higher incidence of problems.

Vitamins, Minerals, and Water: The Regulators

In general, the experts believe that you can receive your vitamins and minerals in sufficient amounts from a well-balanced diet. They also suggest that you drink water at a rate of six to eight glasses per day—more if you work out rigorously.

Planning a Balanced Diet

Up and down Elm Street, families begin the day with healthy breakfasts. The Gilmores eat bran muffins, orange juice, and shredded-wheat cereal with milk. Across the street, the Lins sit down to a traditional Korean breakfast of soybean soup with chunks of bean curd and rice.

People's food choices are influenced by many factors, one of which is their culture. The term *culture* refers to the way of life of a group of people, including their customs and beliefs. Food is one important aspect of culture. As the two breakfasts demonstrate, different groups consume different foods. Look at Figure 1.6.3 and imagine which breakfast you would choose.

Both culture and personal preferences affect the types of food that are served in your household. Some families may dislike fish, for example, while others may choose not to eat red meat. In addition, most people respond to peer pressure when selecting food; when you eat a meal with friends, you may choose different foods than when you are by yourself or with your family. Your economic situation also plays a role in what you decide to eat. People with low incomes cannot afford to buy certain foods.

Breakfast Menu	Vegetable Group	Fruit Group	Dairy Group	Meat-Poultry-Fish-Dry Beans-Eggs-Nuts Group	Grain Group
Yogurt and fruit; whole-wheat toast		✓	✓		✓
Peanut butter on bread; orange juice; milk		✓	✓	✓	✓
Tortilla with beans and cheese; vegetable juice	✓		✓	✓	✓
Cream of tomato soup; crackers and cheese	✓		✓		✓



Figure 1.6.3: Breakfasts can be as varied as you want them to be. Which of these breakfasts would you choose?

Reprinted from *Health Skills for Wellness*, third edition, by B. E. (Buzz) Pruitt, Kathy Teer Crumpler, and Deborah Prothrow-Stith (2001), Prentice Hall, Inc.

When you are making decisions about what to eat, consider the nutrition content of foods, as illustrated in Figure 1.6.4. There are many ways of meeting your nutritional needs, no matter what your preferences are. With a little imagination, you can have a variety of well-balanced meals and snacks.

Meals

What is your favorite meal of the day? Whether it is breakfast, lunch, or supper, it and your other meals should provide you with a balance of healthy nutrients.

Breakfast

Even if you are rushed in the morning, do not neglect breakfast. Many nutritionists believe that breakfast is the most important meal. After a night without food, your stomach is empty, and your body needs fuel for the day's activities. A good, balanced breakfast should provide as much as one-third of your daily food needs. If your breakfast is inadequate, you may be tempted later to eat snacks that are low in nutrient density.

Lunch

School cafeterias provide nutritionally balanced meals planned by dietitians. Some school cafeterias even offer nutritious snacks, salad bars, and special diet foods. Because lunch makes up another third of your food needs for the day, make sure that you choose nutrient-dense foods. You might, for example, eat a turkey sandwich on whole-wheat bread, a salad, a carton of milk, and an orange.

Supper

In many cultures around the world, lunch is the major meal of the day. In the United States, the biggest meal is generally the evening meal. Because you may be less physically active after this meal, supper should not account for more than the final third of your daily calorie needs. The evening meal can be an opportunity to

Figure 1.6.4: You are in control of the foods you select in the school cafeteria. Be sure to consider the nutrient value of your lunch selections.
Courtesy of Ken Karp.



fill in gaps in the day's Food Guide Pyramid selections. Suppose, for example, you have not eaten foods from the vegetable group at breakfast and lunch. You might volunteer to prepare a fresh green salad for dinner that includes several vegetables, such as spinach, carrots, and celery.

Snacks

Snacks can contribute significantly to your nutritional needs if you choose them wisely. However, many snack foods, such as those frequently sold in movie theaters, vending machines, and the snack-food sections of supermarkets, are high in fats and sugar and low in nutrient density. If you fill up on chips, soft drinks, and candy bars, you may have no appetite for the nutrient-dense foods that you need. Moreover, because snack foods are often high in calories, frequent snacking may result in unwanted weight gain. Finally, many snack foods, such as soft drinks and chocolate, contain caffeine, which can cause nervousness and sleeplessness.

For snacks, choose foods with a high nutrient density. Instead of an evening snack of cookies, try satisfying your craving for sweets with some fruit. Make a bagel, not a doughnut, your after-school treat. When you go to the movies, choose unbuttered popcorn instead of chips or candy.

Fast Foods

Picture this: You and a friend drop by your favorite fast-food restaurant several times a week for a meal of double cheeseburgers, fries, and shakes. Table 1.6.1 shows a nutritional breakdown of your favorite fast-food meal.

Similar to this one, many fast-food meals are high in fat and calories. When you eat in fast-food restaurants, follow these guidelines:

- **Substitute low-fat or nonfat milk or orange juice for shakes and soft drinks.**
- **Select the salad bar in place of fries and onion rings.**
- **Choose a grilled chicken sandwich instead of a hamburger or cheeseburger.**
- **Sauces and dressings can add a lot of fat. Use them sparingly.**
- **Taste food before adding extra salt to it.**

Improving Your Diet

The Food Guide Pyramid's recommendations can help you select specific kinds and amounts of food. In addition, nutrition experts have identified some general ways in which the American diet can be improved. Their recommendations, called the Dietary Guidelines for Americans, can help you plan a healthy diet.

Table 1.6.1: Calories and Fat in a Typical Fast-Food Meal

Food	Total Calories	Calories from Fat	Percent Calories from Fat
Double cheeseburger	490	245	50%
French fries	330	160	49%
Chocolate shake	290	14	5%
Total for whole meal	1,110	419	38%

- **Eat a variety of foods.** To obtain all the different nutrients you need, choose a wide selection of foods.
- **Balance the food you eat with physical activity to maintain or improve your weight.** Health problems can develop if you are too fat or too thin.
- **Choose a diet with plenty of grain products, vegetables, and fruits.** These foods are especially rich in starch and fiber.
- **Choose a diet low in fat, saturated fat, and cholesterol.** Choose lean meats, fish, poultry, and legumes instead of fatty meat. Cut away all visible fat on meats, and remove the skin from poultry. Limit fried foods, including potato chips, french fries, and doughnuts.
- **Choose a diet moderate in sugars.** Foods high in sugar are high in calories but often low in more useful nutrients. Limit your intake of sweet snacks and soft drinks.
- **Choose a diet moderate in salt and sodium.** Sodium, which is found in table salt and salty foods, has been linked to high blood pressure. Avoid eating too many salty snacks, pickled foods, luncheon meats, and canned soups. Do not add salt to foods at the table.
- **Adults who use alcohol should do so in moderation.** Alcoholic beverages are very low in nutrient density. In addition, as you will learn later, alcohol can damage every system in your body. Many adults choose not to drink at all, but those who do drink alcohol should strictly limit their intake.

Changing Nutritional Needs

Just as your body changes throughout life, so do your nutritional needs. During infancy, childhood, and adolescence, the body needs great amounts of all the nutrients necessary for physical growth. Teenagers need ample protein in their diets to support their physical growth. Adolescents also need significant amounts of iron; girls lose iron during menstruation, and boys need additional iron to support the development of muscle mass. The need for calcium also reaches its peak during the teenage years. Adolescent girls, in particular, are advised to eat calcium-rich foods as a means of preventing the weakening of bone that can occur later in life.

After adolescents become adults, their activity levels generally decrease, and continue to go down as they grow older. As activity decreases, so do energy needs. For this reason, adults need to watch their caloric intake carefully. Older adults, moreover, may need to increase the fiber in their diet as an aid to digestion. With proper attention to their nutritional needs, older people can live healthy and vigorous lives.

Managing Your Weight

Are you content with your weight, or would you like to change it in some way? If you are comparing yourself to athletes, film stars, and friends whose appearance you admire, you may be trying to achieve a weight that is unrealistic for you—and even unhealthy. When people have unrealistic expectations about their weight, they sometimes develop eating disorders such as anorexia nervosa and bulimia. However, some people do have good reasons for wanting to lose or gain weight. Those reasons relate to health, and not to some idealized concept of beauty or handsomeness.

Assessing Your Weight

Cassie and her best friend Thuy are the same height. Cassie weighs 10 pounds more than Thuy, but both girls have a weight that is appropriate for them. Thuy is small-boned, while Cassie has a larger bone structure. In addition, Cassie is very athletic, and some of her extra weight is in the form of muscle mass, not body fat. A person's appropriate weight depends on various factors, including body structure and level of activity. Your appropriate weight is one that you feel comfortable with, one that does not present any health risks. A physician or nutrition expert can help you determine your appropriate weight.

The amount of body fat, rather than weight, should be your concern. Various tests measure body fat. In one test, for example, an instrument called a skin-fold caliper is used to measure the fat deposits that accumulate under the skin.

Even though you do not have skin-fold calipers, you can get a rough idea of whether or not you have too much body fat. Pinch a fold of skin on your upper arm and estimate its thickness. If the fold of skin is more than one inch (2.5 centimeters) thick, you may have excess fat. However, remember that your estimate is not as accurate as a test done by a professional who is trained in evaluating weight problems.

Appetite, Hunger, and Metabolism

If an appropriate test has determined that you should change your weight, you will probably need to modify your eating habits. Once you have achieved a healthy weight, you will want to maintain it. To maintain a healthy weight, the number of calories that you eat each day should match the daily calorie needs of your body.

Calories are units of energy. If you eat more calories than your body can use, it will store the excess energy as fat, causing you to gain weight. A diet that contains fewer calories than you need, can make you lose weight.

Your calorie needs are partly determined by your activity level; the more active you are, the more calories you need. In addition, your basal metabolic rate—the rate at which you use energy when your body is completely at rest—affects your calorie needs. The higher your basal metabolic rate, the more calories you will burn. Various factors affect basal metabolic rate. For example, older people tend to have a lower basal metabolic rate than do younger ones. Children and pregnant women tend to have higher basal metabolic rates than the rest of the population. Regular exercise may help increase a person's basal metabolic rate.

If you are trying to change your eating habits, your task will be easier if you understand the physical and emotional factors that make you crave food. **Hunger** is a feeling of physical discomfort that is caused by your body's need for nutrients. **Appetite**, in contrast, is a desire for food that is based on emotional factors rather than nutritional need. Unlike hunger, which is an inborn response, appetite is learned. For example, suppose you smell chicken roasting. Your appetite may make you want to eat the chicken because you have learned to associate that particular aroma with a delicious taste. Your appetite may sometimes make you eat even when you are not hungry.

Appetite and hunger are not the only factors that affect people's eating behavior. Emotional stress, for example, can influence eating. Some people crave more food when they experience stress, while others lose their appetite. People may eat because they are bored or because they are with others who are eating.

Dangers of Obesity

If you frequently eat more calories than you need, you risk becoming overweight. People are overweight if they weigh more than 10 percent above their appropriate weight. The condition known as **obesity** (oh BEE sih tee) occurs when a person's weight is 20 percent or more above an appropriate weight. Obesity can create many serious health problems and risks, as illustrated in Figure 1.6.5. Obese people may suffer from high blood pressure and experience difficulty breathing. Being obese also increases a person's risk of heart attack, stroke, diabetes, arthritis, and certain forms of cancer. People who are significantly overweight should make every effort to reduce to a healthier weight.

Reducing Weight and Fat Safely

A sensible program of weight loss involves choosing nutritionally balanced meals and snacks. Even though you want to reduce the number of calories that you consume, you still need to make sure that you are obtaining the nutrients necessary for good health. Choose low-calorie foods that are high in nutrient density.

Recognizing Eating Patterns

Before you plan your diet, keep a diary of what you presently eat. Record the foods that you consume, when you eat them, and how you feel at these times. Use calorie guides to count the approximate number of calories you consume each day.

Key Note Terms

hunger – a feeling of physical discomfort caused by your body's need for food.

appetite – an emotional desire for food

Key Note Term

obesity – a condition that occurs when a person's weight is 20 percent or more above an appropriate weight for one's height and body structure.

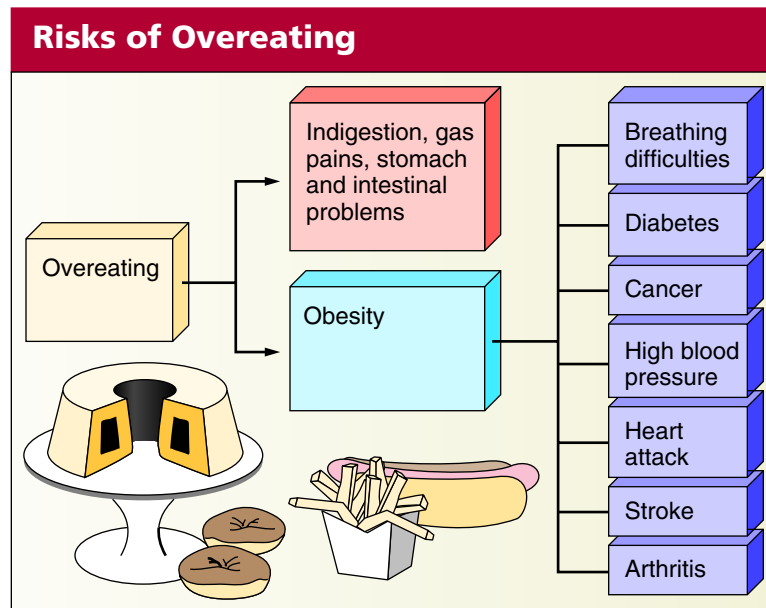


Figure 1.6.5: Overeating can lead to obesity. People who are obese have an increased risk of developing many health problems.

Courtesy of Function thru Form.

Dieting Myths and Facts

There are many myths and facts surrounding diets and dieting.

MYTH: Eating starchy foods, such as bread and pasta, will make you gain weight.

FACT: Starchy foods, or complex-carbohydrate foods, have fewer calories per ounce than fats.

MYTH: You can lose a lot of weight just by exercising.

FACT: To lose a pound by exercising alone, you would need to run for 4 1/2 hours or do aerobics for more than 6 hours.

MYTH: You can lose weight if you don't eat breakfast.

FACT: Omitting any meal is likely to make you overeat at the next meal. If you skip breakfast, you will probably eat an extra-large lunch.

MYTH: You can lose weight by eating only one food, such as grapefruit, bananas, rice, or celery.

FACT: Because one-food diets are monotonous and nutritionally inadequate, dieters return to previous eating patterns and regain weight.

MYTH: Drinking caffeine always makes your appetite decrease.

FACT: Caffeine can make the level of sugar in your blood drop. This can make you hungry.

MYTH: After you lose weight, you can then resume your former eating habits.

FACT: Maintaining weight loss means changing eating and exercise patterns for the rest of your life.

As you review your diary, you may discover eating patterns or behaviors you were not aware of. You may even find out what triggers your overeating. Some people overeat when they are disappointed, depressed, excited, or tired.

Planning Helpful Strategies

The following are some strategies that will help you eat sensibly:

- **Do not try to lose weight too fast. If you change your eating habits gradually rather than suddenly, your weight-loss program will be more successful in the long run.**
- **Take small portions of food and eat your food slowly so that you can enjoy its taste.**
- **If you tend to overeat when you are unhappy or bored, think of an enjoyable behavior that you might substitute for eating—taking a walk, for example.**
- **To avoid between-meal hunger, save some food from regular meals, such as bread, and later eat it as a snack.**
- **If you occasionally overeat, do not become upset. Just go back to your sensible eating habits.**

Exercising

Your weight reduction program should involve regular exercise, such as walking, dancing, or swimming. Changing your eating habits alone is far less effective than eating changes combined with exercise. When you decrease your calorie intake but do not exercise, your basal metabolic rate goes down. Thus your body does not burn calories as rapidly as it did before you began reducing your calorie consumption, and your weight loss slows or stops.

Fad Diets, Diet Aids, and Fasting

Many people want to lose weight very quickly, so they rely on strategies such as fad diets, pills, or fasting. These approaches are unrealistic and unsafe.

Fad Diets

A fad diet is a popular diet that may help a person lose weight but without proper regard for nutrition and other matters of health. Fad diets range from high protein, low carbohydrate diets to diets with special ingredients that are supposed to help you burn fat. These diets often exclude some important nutrients.

The weight loss achieved with a fad diet is usually only temporary. Frequently, fad diets restrict food choices too much. People become so bored with the diet's limitations that they stop dieting and begin to overeat again.

Diet Pills

Diet aids, such as pills and candies, are supposed to suppress the appetite. However, they are usually ineffective and can be habit-forming. The major ingredient in most diet pills is caffeine, which may cause nervousness, sleeplessness, and high blood pressure. Diet aids do not provide long-term weight control. If you want to lose weight and keep it off, you need to change your eating behavior rather than rely on medication.

Fasting

When people refrain from eating all foods, they are **fasting**. Fasting is not a healthy way to lose weight, because muscle tissue as well as fat is lost. Long-term fasting may stunt your growth. It may also put a strain on your kidneys and cause hair loss. It has even been linked with irregular menstrual periods in girls and women.

Gaining Body Weight Wisely

Being too thin can be as emotionally painful as being too heavy. You are underweight if you weigh at least 10 percent less than appropriate. If you are underweight, remember that teenagers as a rule need a large number of calories for growing. Eventually, your growth rate will become slower and then stop. You may put on weight when you are in your early twenties. In addition, some people are naturally thinner than others, and thinness is not a health problem unless it is excessive. However, since underweight can be an indication of health problems, underweight people should be checked by a physician.

The goal of gaining weight can best be achieved by changing any habits that keep you too thin. Eliminate snacks right before mealtimes because they may spoil your appetite. When you do snack, choose nutrient-dense foods, as shown in Figure 1.6.6, that are high in calories. Never skip a meal. At mealtimes, take bigger helpings of food than usual. While you are increasing your caloric intake, do not neglect exercise. Exercising will help you gain healthy muscle tissue as well as fat.

Key Note Term

fasting – a process of abstaining from all foods for a period of time

Nutrient-Dense Foods		
Calories		
	135	Banana-nut bread 1 slice
	280	Bean salad 3/4 cup
	150	Whole milk 8 oz. (202 grams)
	114	Cheddar cheese 1 oz. (28 grams)
	282	Peanut butter 3 tbsp. (48 grams)
	186	Brazil nuts 1 oz. (28 grams)
	217	Raisins 1/2 cup
	177	Sardines 3 oz. (85 grams)

Figure 1.6.6: If you are trying to gain weight, snack on nutrient-dense foods such as these.

Courtesy of Function thru Form.

Special Diets

People's circumstances may call for special diets. Certain physical conditions, such as diabetes and hypoglycemia, have special nutritional requirements. Lifestyle choices, such as the decision not to eat meat, may also affect how people meet their dietary requirements.

Diet and High Blood Pressure

As blood flows through your body, it exerts a force called blood pressure that pushes against the walls of your blood vessels. High blood pressure, or hypertension, is a condition in which this force becomes too strong. Sodium, found in table salt and many other foods, is thought to be a factor in high blood pressure. People with high blood pressure need to limit their sodium intake. They can do this by using herbs and spices instead of table salt to add flavor to foods. They also need to avoid salty snack foods, such as potato chips. Many processed foods, such as soup mixes and canned vegetables, contain large amounts of sodium. Therefore, people with high blood pressure need to read food labels carefully to avoid high-sodium foods.

Diets for Diabetics

Glucose is the principal carbohydrate that circulates in your blood and is used by your cells for energy. A substance called **insulin** enables glucose to pass from the blood into the body's cells. **Diabetes mellitus** is a disorder in which the body does not produce or properly use insulin, resulting in high levels of glucose in the blood. Symptoms may include sudden excessive thirst, an increase in appetite combined with a loss in weight, and frequent urination. Some people also feel fatigued, irritable, and confused. If you have a combination of any of these symptoms, you should see a physician.

Diabetes usually can be controlled. Diabetics may need to take daily insulin injections. They also need to eat balanced meals on a regular schedule. Frequently people with diabetes carry a snack that they can eat to regulate their blood glucose levels if they are unable to eat a regular meal.

Diabetics' diets should help to control blood glucose levels by leaving out foods high in sugar and focusing on complex carbohydrates. The American Diabetes Association also emphasizes the importance of foods high in fiber and low in fat. Obesity is a factor in one type of diabetes, and those diabetics need to control their weight.

Diet and Hypoglycemia

If the body produces too much insulin, the level of glucose in the blood may fall dramatically. The result is a condition known as **hypoglycemia**, or low blood sugar. People with hypoglycemia may experience hunger, weakness, severe headaches, and shakiness as their blood glucose levels fall. Hypoglycemics need to eat several small meals per day instead of three big ones, with foods rich in complex carbohydrates and low in fat. Concentrated sweets, such as candy, should be avoided altogether.

Key Note Terms

insulin – a protein hormone in the pancreas that is essential for the metabolism of carbohydrates and the regulation of glucose levels in the body

diabetes mellitus – a disease in which the body does not produce or properly use insulin, resulting in high levels of glucose in the body

Key Note Term

hypoglycemia – low blood sugar

Vegetarianism

A person who does not eat meat is called a **vegetarian**. Some vegetarians eat no foods that come from animal sources. Others, however, include eggs and dairy products. Complete proteins contain all the essential amino acids, but incomplete proteins do not. Vegetarians who eat no food from animal sources must make sure that their diets contain all the essential amino acids. Complete proteins can be obtained from a combination of plant foods. For example, beans and rice are a complete protein and are illustrated in Figure 1.6.7.

Vegetarians are less likely than others to suffer from heart disease, a problem that can result from eating too much animal fat. In addition to protein, however, vegetarians must make sure that they are obtaining adequate supplies of the vitamins and minerals they need. Variety is therefore especially important in a vegetarian diet. For a more comprehensive guide to a vegetarian diet, look at Figure 1.6.8.

Nutrition and Pregnancy

A woman's diet during pregnancy, see Figure 1.6.9, must provide for her needs as well as the needs of the developing baby. When a mother's diet is inadequate, she may give birth to a premature baby or a baby who weighs less than normal. A baby with a low birth weight may be susceptible to disease and slow to develop mentally and physically.

Most pregnant women should gain between 25 and 35 pounds (about 11 to 16 kilograms) during the pregnancy. To do this, they need to consume more calories than they did before pregnancy (about 300 extra calories per day). A pregnant woman also needs extra amounts of protein and the vitamin folate, since both of these nutrients are essential for the formation of the baby's cells. The minerals calcium, phosphorus, and magnesium are needed for building the baby's teeth and bones. Iron is especially important. Without it, the baby might not get enough oxygen from its mother's blood. For this reason, extra iron is often prescribed during pregnancy.



Key Note Term

vegetarian – a person who does not eat meat

Figure 1.6.7: Because rice and beans contain complementary proteins, when you eat both together, you obtain all the essential amino acids.

Courtesy of Steven Mays.

Figure 1.6.8: The vegetarian food pyramid.

Illustration by Merle Poirier,
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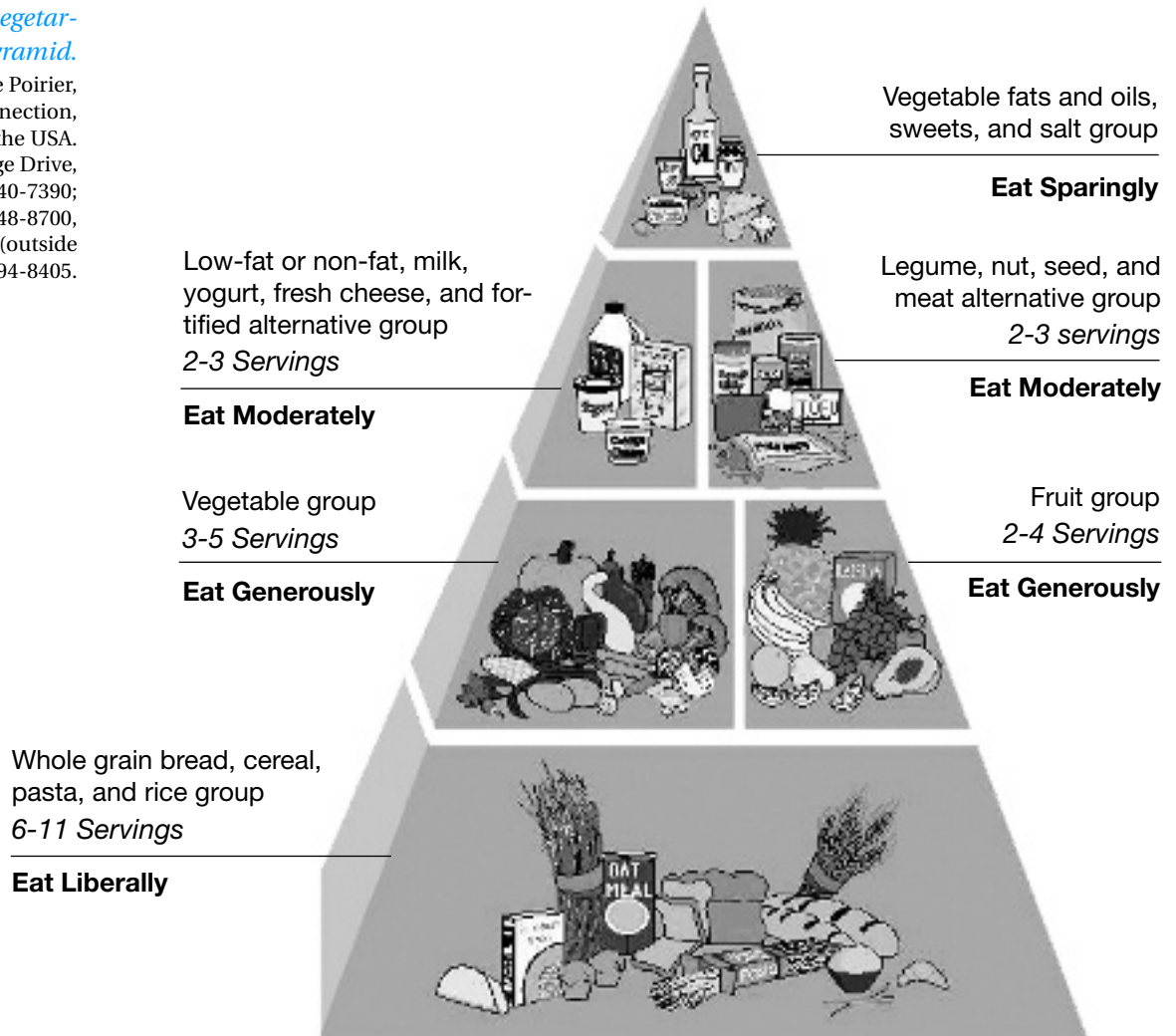


Figure 1.6.9: During pregnancy, a woman needs to provide nutrients for herself and her developing baby.

Courtesy of David Dempster/
Offshoot Stock.



Pregnant teenagers have higher nutrient needs than any other group in the population. Since pregnant adolescents themselves are still growing, their diets need to supply both them and their babies with nutrients needed for growth. Young pregnant teenagers—those between the ages of 13 and 16—are encouraged to gain about 35 pounds (16 kilograms).

Diets for Athletes

Athletes should eat a basic well-balanced diet but with added calories to accommodate a higher level of physical activity. Most of these calories should come from an increase in complex carbohydrates. High-fat and sugar-rich foods should be avoided. During competition, athletes should drink plenty of fluids to replace water lost in perspiration.

You have probably heard of runners practicing carbohydrate loading before a long race. **Carbohydrate loading** consists of greatly increased carbohydrate intake, accompanied by decreased levels of exercise, in the days immediately before a competition. This practice is an attempt to make extra carbohydrates available to supply energy for the muscles. Carbohydrate loading may benefit highly conditioned athletes who participate in long-lasting sports such as marathon running. However, for most athletes, the best policy is just to eat their normal diet.

Buying Food Wisely

To choose nutrient-dense foods, you need knowledge and practice. When you buy food, do not be swayed by attractive packaging. Instead, use food labels and other information to evaluate foods as shown in Figure 1.6.10.

Food Labels

The U.S. Food and Drug Administration (FDA) requires manufacturers of foods list certain information on a food's label. Labels must provide the name and address of the manufacturer, the weight of the food, and a list of ingredients in descending order of weight. It must also indicate the number of servings per container, based on a standard serving size for that type of food.



Key Note Term

carbohydrate loading – an increased carbohydrate intake practiced especially by long-distance runners

Figure 1.6.10: When you examine a food label, you should check the fat and calorie content of the product.

Courtesy of Ken Karp/A&P Supermarket, Scarsdale, NY.

Nutrition Information

Food labels must also provide facts about the nutrient content of the product. The nutrition information on food labels is especially important for consumers to read and evaluate. The label indicates the following for each serving:

- The total number of calories per serving
- The number of those calories that come from fat
- The weight, in grams or milligrams, of nutrients such as saturated fat, total fat, cholesterol, sugar, dietary fiber, total carbohydrates, protein, and certain minerals
- The percentage of the Daily Values for different nutrients that are supplied by the food

Manufacturers are free to volunteer additional information. Any claims relating to nutrition or health, however, must meet FDA standards.

Food Additives

When you have read a food label, have you ever noticed a series of long chemical names in the ingredients list? These are food additives. **Additives** are chemicals that are added to a food to prevent spoiling, to control and improve color and texture, to replace or add nutrients, or to improve flavor. While some people may be allergic to specific additives, such as artificial colors, food additives are safe for most people.

Additives that are used to prevent spoilage or to keep foods from losing their natural color or texture are called **preservatives**. For example, the preservative *calcium propionate* prevents mold from growing on baked goods. Other preservatives keep

Key Note Terms

additives – chemicals added to food to prevent spoiling, control and improve color and texture, replace or add nutrients, or improve flavor

preservatives – additives that help to prevent food spoilage or to keep foods from losing their natural color or texture



Figure 1.6.11: During processing, nutrients are added to fortified and enriched foods such as those shown here.

Courtesy of Steven Mays.

peeled and cut fruits from becoming brown. Many preservatives prevent food poisoning and increase the length of time that a food is safe to eat.

Often when a food is canned or processed in some other way, some of its vitamins and minerals may be lost. When nutrients are added to replace those that have been lost, the food has been **enriched**. Some breads and cereals are enriched with the vitamins *thiamin*, *riboflavin*, *niacin*, and the mineral *iron*. If vitamins, minerals, and even proteins are added to a food that does not normally contain them, the food is **fortified**. Milk, for example, is fortified with vitamin D. The types of foods shown in Figure 1.6.11 are frequently enriched or fortified.

Sometimes manufacturers use additives to improve the texture or taste of foods. A **leavening agent** makes baked goods rise. An **emulsifier** (ih MUHL suh fy ur) is used to keep fats from separating from the other ingredients in a food. Emulsifiers in salad dressing, for example, keep the fat from floating to the top.

Evaluating Foods

Wise shoppers check the nutrient content of foods. Price and freshness are other characteristics to consider.

Nutrients

Carefully read the label on a packaged food. Check the number of calories and whether the food contains large amounts of fat or sugar. Compare similar foods to determine which are more nutritious. If you are choosing breakfast cereals, for example, look at the amount of dietary fiber, vitamins, minerals, and protein in different products.

Freshness

Many foods, such as meat and baked goods, have a date on their packages. This **product date** is an estimate of how long the product is usable. Reduced-price foods may not be a bargain if the product date has already passed.

Price

To find out which of two competing products is the better buy, compare the **unit price**, or cost per unit of measurement. The unit price is usually expressed in ounces or pounds. Suppose, for example, a 20-ounce loaf of bread and a 16-ounce loaf of bread both cost \$1.50. The 20-ounce loaf has a unit price of about 8 cents per ounce, while the 16-ounce loaf costs about 9 cents per ounce. If both these loaves have approximately the same nutrients, which is the better buy?

Advertising and Food Choices

Advertising can have a strong influence on food choices. Often advertisers use special techniques, such as humor and lively music, to make products appealing. A television commercial for frozen waffles, for instance, may show a smiling, healthy-looking family. Yet the label on the waffles may reveal that the product is not particularly nutritious. As a smart food consumer, be aware that advertisements can mislead you.

Key Note Terms

enriched – the addition of nutrients to a processed food

fortified – vitamins and minerals added to a food that normally doesn't contain these vitamins and minerals

leavening agent – a substance that makes baked goods rise

emulsifier – a substance that keeps fats from separating from other ingredients in a food

Key Note Terms

product date – an estimate of how long a food product is usable

unit price – the cost per unit of measurement

Reading a Food Label

Every time you go into a supermarket, you see thousands of different food products: cereals in brightly colored boxes, snack foods in shiny foil bags, and frozen dinners in packages that can be used in a microwave oven. Attractive and convenient packaging is designed to make you want to purchase the product. In addition, before you even enter a store, 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 U.S. Food and Drug Administration (FDA) requires packaged foods to be labeled with a list of ingredients and nutrition information.

To use food labels to make healthy food choices, use the following steps:

1. Read the ingredients. Be aware of the ingredients that a food contains.
 - Become familiar with terms for different kinds of ingredients. For example, even if the word *sugar* does not appear on the label, the product may contain sugar; words ending in *-ose* are generally the names of different sugars.
 - Notice that ingredients are listed in order by weight from most to least.
 - If you have specific dietary restrictions, it is especially important to check the ingredients list first. For example, people who have an allergy for a particular food need to make sure that the product does not contain that ingredient.
2. Notice the number of servings per container. Serving sizes are standardized for over 100 different food categories, so you can compare similar food products for the number of servings they provide. For example, if you need enough lasagna to feed four people, a brand that provides four servings in one container may be a better purchase than one that provides only three servings per container.
3. Note the calories in one serving. Keep in mind that recommended daily caloric intake levels vary depending on a person's age, sex, weight, basal metabolism, and activity level. Active teenagers usually need more calories than do older people.
 - If the number of calories is high and you are trying to lose weight, you might want to choose a different food.
 - If you are trying to gain weight, a high-calorie food may be a good choice, as long as it provides useful nutrients.
4. Look at the percentages of the Daily Values. The food label indicates what percentages of the Daily Values for different nutrients are supplied by that product. For example, if the label says "Vitamin C—20%," that food supplies 20 percent of the vitamin C that the average person should obtain each day. Notice that the Daily Values are based on a diet of 2,000 calories per day.
 - Check the percentages of valuable nutrients, such as dietary fiber, iron, calcium, and vitamins. Is this food a good source of many nutrients that you need?
 - Also note the percentage of nutrients that you should limit, such as saturated fat and cholesterol. If a food is high in those nutrients, you may want to avoid it.
5. Read any health-related descriptions or claims. The FDA sets standards for the use of descriptions such as "high fiber" and "low fat." You can use those descriptions for guidance. Also notice any health claims on the package. For example, a label can indicate that high-calcium foods may help prevent osteoporosis.

Conclusion

The science of nourishing the body properly is a continually revolving door of facts, information, and misleading information. Much of the data is very conflicting and difficult to sort out, although there is some material that has remained consistent throughout the years. A basic understanding of this information will enable you to stay properly nourished.

To begin building a healthy diet, the Dietary Guidelines of Americans provides the following advice:

- **Eat a variety of foods to obtain the energy, proteins, vitamins, minerals, and fiber you need for good health.**
- **Maintain a healthy weight to reduce your chances of having high blood pressure, heart disease, a stroke, certain cancers, and the most common kind of diabetes.**
- **Choose a diet low in fat, saturated fat, and cholesterol. Because fat contains over twice the calories of an equal amount of carbohydrates or protein, a diet low in fat can help you to maintain a healthy weight.**
- **Choose a diet with plenty of vegetables, fruit, and grain products that provide the needed vitamins, minerals, fiber, and complex carbohydrates, which can also help you to lower your intake of fat.**
- **Use sugars only in moderation. A diet with lots of sugars has too many calories and too few nutrients for most people.**
- **Use salt and sodium only in moderation.**
- **Avoid drinking alcoholic beverages. Although alcoholic beverages supply calories, they have little or no nutrients. Furthermore, drinking alcohol is the cause of many health problems and accidents.**

This lesson presented up-to-date information and numerous guidelines from which you can make proper dietary choices. However, there are still many unanswered questions, such as “What is the role of supplementation?” and “How much fat is too much?” In the future, there will be more discoveries, which will lead to unlocking more doors and to expanding our understanding and potential for a dynamic, healthier way of life.

In the next lesson, you get even more information about living a healthy lifestyle and how you can take better care of yourself.

Lesson Review

1. **What are the risks of obesity?**
2. **What tendencies encourage fat accumulation?**
3. **Describe a desired state for a healthy lifestyle.**
4. **List the steps that you can take to achieve a lean body fat content.**