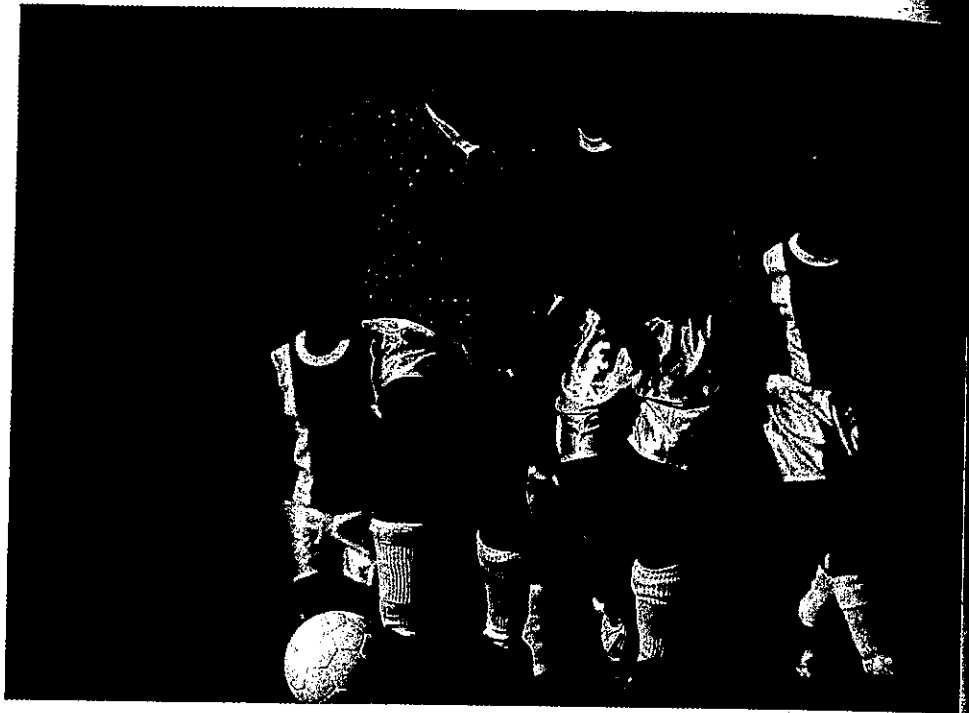


Figure 6.5

Free or low-cost exercise programs, especially those involving team sports, are available through schools and community centers. These programs can improve your fitness and lead to new friendships.



Many communities offer facilities you can use for free or at a reduced cost such as the following:

- parks and green spaces for playing Frisbee, throwing a baseball, or playing soccer (Figure 6.5)
- outdoor sports facilities such as baseball or softball fields, and tennis and basketball courts
- indoor sports facilities such as weight rooms, fitness centers, and racquetball courts
- walking and biking trails, and skate parks
- public pools

Lesson 6.1 Review

Know and Understand



1. Explain how physical activity reduces the risk for developing cardiovascular problems. *2pts*
2. List three body functions that are influenced by physical activity and are believed to reduce the risk for some cancers. *3pts*
3. List two ways physical activity helps with weight control.
4. Describe how physical activity affects sleep quality.

Analyze and Apply

5. Based on what you learned in this lesson, *Tell why* we need case for mandatory physical education classes in high schools.

6. Why might many people spend much of the day engaging in sedentary behavior?
7. Research and analyze the roles of games and sports in the physical activity of people in different cultures.

Real World Health

Physical activity and exercise have many benefits that go beyond your physical health. Identify at least 10 benefits of exercise as identified in this lesson of the chapter. Label each benefit according to whether it affects your physical health, emotional health, or social health. Then, for each type of health, identify a problem you are experiencing in your life that physical activity and exercise might help solve.

Exercise with a Friend

You are more likely to have success maintaining your fitness program if you have the support of your friends and family members. Try to find someone who is interested in engaging in physical activity with you. Do you know someone who might be interested in going for a brisk walk after school, taking a bike ride on the weekends, or joining a yoga class? Most people find it more difficult to make excuses and skip their exercise session if they know that someone is expecting them to be there.

You could also develop new friendships by joining a group with other people interested in a particular type of physical activity. You might meet new people at an aerobics class at a local gym, a pick-up baseball game at a local playground, or a hiking club.

Take Advantage of School and Community Programs

Most children and teenagers attend schools that offer physical education classes. Participating in physical activity during school is a great way to increase fitness. Both the National Association for Sport and Physical Education (NASPE) and the American Heart Association (AHA) recommend that all students engage in regular physical education classes in school. These recommendations include the following:

- Elementary school students should participate in more than 150 minutes of physical education per week.
- Middle and high school students should participate in more than 225 minutes of physical education per week.

Schools can increase the amount of physical activity in a student's life by ensuring that physical education classes are taught by qualified teachers and are provided to all students in all grades. Unfortunately, too few high school students participate in physical education classes on a regular basis.

Many schools and communities provide free or low-cost opportunities to engage in physical activity. You could join an intramural club or intercollegiate sports team offered through your school. Community centers also provide opportunities for noncompetitive physical activity, such as programs in different types of sports, dance and yoga, and weight training.

Health in the Media

Want to Increase Your Fitness? Turn Off the Television!

One of the best ways to increase your physical activity and your fitness level is to decrease the hours you spend watching television. Children and teenagers who watch television for at least six hours a week are typically less physically active than those who watch fewer hours of television. In fact, time spent watching television appears to have a greater negative effect on physical activity levels than other types of screen time, including time spent on the computer and playing video games.

Watching television is also associated with lower levels of physical activity in adults. In one study, people reported watching an average of 3.6 hours of television per day. Researchers found that for each hour of television a person watched, he or she was 16% less likely to engage in recommended physical activity.

Thinking Critically

1. Generate a hypothesis to explain the finding that television viewing has a greater impact on inactivity than other forms of screen time.
2. The impact of television viewing on inactivity in adults seems out of balance with the other results of the study. Evaluate possible reasons why adults are more affected by television viewing than children or teens.

Figure 6.4

Physical activity includes exercise and other activities—such as dancing—that use energy. *List five physical activities that most people can add to their daily routines.*

Personal Profile

How Physically Fit Are You?

These questions will help you assess whether you are currently physically fit.

I engage in 60 minutes or more of physical activity each day. **yes no**

I do vigorous-intensity aerobic physical activity such as running, playing sports, or taking a dance class at least three days a week. **yes no**

I do muscle-strengthening activities such as push-ups or sit-ups at least three days a week. **yes no**

I do bone-strengthening activities such as jumping rope or running at least three days a week. **yes no**

I regularly do yoga, Pilates, or some type of stretching. **yes no**

I make physical activity a regular part of my day by biking to school, walking up stairs instead of taking an elevator, and doing sit-ups or push-ups while watching television. **yes no**

I have enough energy to perform various daily life activities such as carrying groceries or books, walking up stairs, and walking around a shopping center. **yes no**

I make sure to stretch my muscles to cool down after exercising. **yes no**

Add up the number of yes answers to assess your physical fitness. The more yes answers you have, the more physically fit you are.



Deciding to exercise is a good lifestyle choice if you want to be physically fit. You do not need to engage in structured exercise, however, to improve your fitness level. Your health and fitness can benefit from many different types of physical activity.

If you don't currently get regular physical activity of any kind, you may find it difficult to get started. Many easy strategies exist for you to begin and maintain a fitness program.

Integrate Physical Activity into Your Daily Life

Ideally, you should have a fitness program that matches up well with your daily life. To achieve this, try to find ways of being physically active that don't require too much time or money. For example, it is easier—and cheaper—to jog around your neighborhood or follow a yoga DVD than it is to join an expensive health club or gym.

Most people feel that they are too busy to find time to exercise. They feel that they have too many other tasks to accomplish each day. Even the busiest people should be able to find a few hours each week to exercise.

When you make physical activity a part of your daily or weekly routine, you will find the time to do it more easily. The first and most important step is to set aside time each week—even as little as 10 minutes at a time—to engage in some type of physical activity. Soon the exercise will become part of your daily life and it may even feel strange to not exercise.

Choose Physical Activities You Enjoy

It is much easier to maintain an exercise program if you find types of physical activity that you enjoy. Some people find engaging in team sports, such as basketball, soccer, or field hockey, particularly fun. Other people prefer to exercise alone, and might find swimming, jogging, or climbing stairs, more enjoyable than team sports. Consider whether you like to exercise outside or inside, and whether you like to exercise alone or with other people.

Improved Academic Performance

Engaging in regular physical activity helps improve thinking, learning, and judgment skills. Not surprisingly, improvements in these skills can lead to better performance in school. Students who participate in regular physical activity demonstrate

- increased academic achievement, including higher grades;
- improved academic behavior, such as spending more time focused on a task; and
- improved concentration and focus in class.

Improving Your Physical Fitness

Although the health benefits of engaging in regular physical activity are clear, most people don't get enough physical activity. Many people spend much of their day engaging in *sedentary behavior* instead, meaning activities that consist of sitting or lying down and using very little energy. Sedentary behaviors include driving, engaging in screen time (TV, movies, Internet, video games), and reading. Statistics show that

- only 35% of American adults engage in physical activity at least five days per week;
- only 47% of American adults meet the *Physical Activity Guidelines for Americans* for general physical activity;
- only 24% of American adults met the Physical Activity Guidelines for muscle-strengthening physical activity; and
- 33% of American adults don't engage in any physical activity at all in a typical week.

The United States Department of Health and Human Services (HHS) recommends that people between 6 and 17 years of age participate in at least one hour of physical activity every day. Do you get at least this much physical activity? What types of exercise do you do on a regular basis? Do you jog, swim, or skate? Do you lift weights, or do push-ups or sit-ups? Do you stretch or do yoga or Pilates? Do you mow lawns, rake leaves, or carry boxes? These are all examples of physical activity, and each of these activities leads to a different type of physical fitness.

We often think of the terms *physical activity* and *exercise* as meaning the same thing. A difference does exist, however, between these two terms. *Exercise*—meaning a type of physical activity that is planned, structured, and purposeful—is actually just one type of physical activity. *Exercise* could be the cycle of exercises you do in PE class, a varsity sports team's practice, or running every day to prepare for a half-marathon.

The term *physical activity* is broader because it includes structured exercise as well as other activities that use energy. Biking to school, playing frisbee with friends, and dancing to music alone in your bedroom are what we would typically call *exercise*, but they are all definitely *physical activity*. (Figure 6.4 on the next page).

sedentary behavior
activities such as sitting or lying down that use very little energy

Physical Activity Guidelines for Americans
a set of recommendations developed by the government, health professionals, and policymakers to help Americans improve their health through appropriate physical activity

exercise
term that describes a type of physical activity that is planned, structured, and purposeful

physical activity
broad term that describes structured exercise as well as other activities that use energy



their muscle mass. Muscles are active tissues that consume calories to use for energy. In contrast, fat stored in the body uses very little energy. This means that a person whose body consists of more muscle and less fat burns calories at a higher rate (Figure 6.3). This higher rate of metabolism helps people lose weight and maintain that weight loss over time.

Improved Sleep

People who engage in regular physical activity experience a better quality of sleep than those who do not exercise. Compared with people who do not exercise, physically active people fall asleep more quickly, enjoy deeper and more restful sleep, awake less often during the night, and stay asleep longer. In fact, research shows that strength training is as effective at improving sleep quality as sleep medications.

Improved Mental Health

People who engage in regular physical activity also experience improvements in their mental health, including lower levels of depression and anxiety. Have you ever been in a bad mood, but then exercised and felt better? This happens because engaging in physical activity can

- cause the brain to release chemicals called *endorphins*, which make you feel good;
- distract you from problems you may be facing;
- increase social interaction with other people who are exercising; and
- lead to increased blood flow to the brain, which contributes to an improved mood.

Engaging in physical activity also makes people feel better about themselves. As a result, they have higher levels of self-confidence and self-esteem.

Figure 6.3

Many people mistakenly think that they need to run long distances to burn calories and lose weight. *How will this girl's weight lifting help her control her weight?*

endorphins
chemicals found mainly in the brain that affect emotions and relieve pain

Health across the Life Span



Rates of Aerobic Activity by Age

According to a nationwide survey of nearly half a million American adults, only 21% of adults met both the cardiovascular and muscle-strengthening guidelines for physical activity. Whether people meet the recommended physical activity guidelines varies widely among age groups. The survey found that

- 29.6% of people 18 to 24 years of age meet the recommended guidelines;
- 24.3% of people 25 to 44 years of age meet the recommended guidelines;
- 19.2% of people 45 to 54 years of age meet the recommended guidelines;

- 15.9% of people 55 to 64 years of age meet the recommended guidelines;
- 13.6% of people 65 to 74 years of age meet the recommended guidelines; and
- 6.4% of people 75 years of age and older meet the recommended guidelines.

Analyzing Data

1. What conclusions can you draw from this data?
2. Select one of the age groups mentioned here, then formulate and evaluate a plan to increase the physical activity levels of people within that group.

- reducing the pain caused by arthritis and other conditions that affect the joints
- increasing the ability to perform normal tasks of daily life

Better Weight Control

Regular physical activity is especially important for people who are trying to lose weight or maintain a healthy weight. More physical activity means your body burns more calories for energy than it would normally. When you burn more calories and reduce the number of calories you eat, you experience a calorie deficit (calories burned is greater than calories taken in). A calorie deficit leads to weight loss. Physical activity combined with a more nutritious diet that contains fewer calories can help you control your weight.

Engaging in regular physical activity can also improve weight control by changing a person's body composition. People who engage in strength training, which includes push-ups, sit-ups, or lifting weights, can increase

Research in Action

Feeling Depressed? Try Some Exercise!

In a recent study, researchers attempted to determine whether exercise could help improve the moods of people who are depressed.

To test this hypothesis, researchers assigned 156 adults with *clinical depression* (a severe level of depression that disrupts daily life) to one of three groups. People in Group One engaged in aerobic exercise (three 45-minute sessions a week).

Group One did not receive any drugs to combat depression. People in Group Two received drugs to relieve the symptoms of depression, but did not engage in aerobic exercise. People in Group Three engaged in aerobic exercise and received drugs. Each group continued their exercise or use of medication for 16 weeks.

After 16 weeks, the researchers examined people in all three groups over time to see if their levels of depression changed. Researchers found that people who engaged in aerobic exercise, even when they received no drugs to help with their symptoms of depression, showed improvements in their mood for as long as six months. In fact, people in all three groups improved at the same rate. This study provides important evidence that exercise is as effective as drug treatment in treating depression.



Thinking Critically

1. After you have finished reading this lesson, evaluate which of the three treatments you would recommend for people experiencing depression. Why?
2. Analyze the reasons why exercise helps treat depression.

Some Health Benefits of Physical Activity

↑ Strength of immune system to better ward off illness

↑ Mental health (mood, ability to cope with stress)

↑ Sleep quality

↑ Intellectual health (learning, thinking, concentration, judgment)

↓ Risk of cancers (colon, lungs, and for females, uterus and breast)

↓ Risk of cardiovascular diseases (heart attack, stroke)

↓ Risk of diabetes

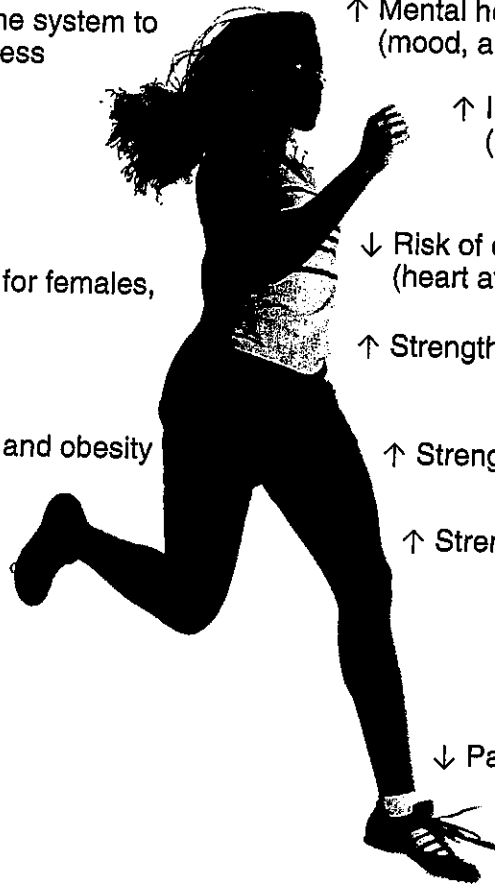
↑ Strength of lungs

↓ Risk of overweight and obesity

↑ Strength of muscles

↑ Strength of bones

Key
↑ Improves
↓ Lowers



↓ Pain due to arthritis

Figure 6.2

Shown above are just some of the ways that physical activity can benefit your physical, emotional, and intellectual health. *In what ways can physical activity benefit your social health?*

Researchers don't know exactly how physical activity reduces the risk of developing particular types of cancer. Physical activity does, however, influence how your body functions, including its production of particular hormones, the rate of metabolism, and the work done by your immune system to fight off disease and infection. The effects of physical activity on these functions may explain how physical activity reduces the risk of developing these types of cancer.

Stronger Bones and Muscles

Engaging in regular physical activity helps your bones and muscles in several ways. Engaging in physical activity increases the amount of fluid in your joints, which helps strengthen the cartilage that covers the ends of your bones. In addition, regular physical activity increases the strength of your bones and ligaments, which means you are less likely to become injured or develop osteoporosis. Regular physical activity also improves the strength of your muscles and increases the blood flow to and from your muscles.

The benefits of regular exercise on bone and muscle strength also include the following:

- slowing the natural loss of bone density that comes with age
- helping to increase or maintain muscle mass and strength
- reducing the likelihood of a fall

People who are physically fit have enough energy to perform their regular daily life activities. They also have enough energy, strength, and flexibility to meet unexpected physical demands (Figure 6.1). This means that people who are physically fit can easily climb a flight of stairs, carry a heavy package, or walk through a shopping mall. In short, *fitness* is the body's ability to respond to the physical demands placed upon it. People who are fit can meet the day's physical challenges with energy to spare.

In this lesson, you will learn how engaging in physical activity benefits your health. You will also learn strategies for improving your physical fitness.

What Are the Benefits of Physical Activity?

Engaging in regular physical activity is one of the most important actions you can take to help your physical and psychological health. One of the most significant benefits of physical activity is a lowered risk for certain diseases.

Lower Risk of Cardiovascular Disease

Even moderate amounts of exercise can lead to major benefits for your cardiovascular system. These benefits include reduced risk of cardiovascular disease, reduced risk of stroke, lower blood pressure, and lower blood cholesterol levels.

How does regular exercise reduce your risk of developing cardiovascular problems? The job of the cardiovascular system is to carry oxygen in the blood throughout the body. When you engage in physical activity, your heart beats faster and your breathing increases to provide your muscles with sufficient oxygen. If you exercise regularly, your heart will strengthen and it gets its own workout whenever you exercise. Exercise also strengthens the lungs, which must work harder to get plenty of oxygen to the muscles during your workout.

Physical activity is also associated with living longer. Heart disease and stroke are two leading causes of death in the United States. People who get at least 150 minutes (2 hours and 30 minutes) of moderate-intensity activity each week are less likely to develop these diseases than people who don't exercise. Engaging in regular physical activity can add years to your life (Figure 6.2).

Lower Risk of Cancer

Engaging in regular physical activity also reduces your risk of developing some types of cancer. Research on the link between physical activity and cancer demonstrates that physically active people have a lower risk of colon cancer and may have a lower risk of lung cancer than people who do not exercise. Research also shows that physically active women may have a lower risk for breast cancer and endometrial cancer (cancer of the uterus) than women who do not exercise.



Figure 6.1

Are you physically fit? Are you able to perform routine tasks without feeling exhausted or strained?

fitness
the body's ability to meet daily physical demands

Lesson 6.1

The Benefits of Improved Physical Fitness

Key Terms



E-Flash Cards

In this lesson, you will learn the meanings of the following key terms.

endorphins

exercise

fitness

physical activity

Physical Activity

Guidelines for

Americans

sedentary behavior

Lesson Objectives

After studying this lesson, you will be able to

- summarize how physical activity can lower risks for diseases such as cancer;
- describe the benefits of physical activity related to bone and muscle strength;
- identify ways in which physical activity helps control weight and improve sleep;
- recognize how physical activity can improve academic performance;
- differentiate between exercise and physical activity; and
- summarize strategies for improving your fitness.

Before You Read

Stress and Physical Activity

Draw a line down the middle of a sheet of paper to create two columns. In the column on the left, list the top ten stressors that you are experiencing right now. In the column on the right, identify how regular physical activity could help manage each stressor. Share and discuss your lists with your classmates.

My top ten stressors	How physical activity can help

Warm-Up Activity

Do I Get Enough Physical Activity?

On a separate sheet of paper, list all of the regular physical activity and all of the structured exercise that you have participated in over the last seven days. Label each item as a sport, chore, physical education class activity, or the regular physical activity of your daily routine. Write a reflection explaining whether you feel you get enough exercise. What changes could you make to include more physical activity and exercise in your daily life?



Physical Fitness Lesson 6.1

The Benefits of Improved Physical Fitness

What's Your Health and Wellness IQ?

Take this quiz to see what you do and do not know about physical fitness. If you cannot answer a question, pay extra attention to that topic as you study this chapter.



Health and Wellness IQ

Assess

1. Identify each statement as True, False, or It Depends. Choose It Depends if a statement is true in some cases, but false in others.
2. Revise each False statement to make it true.
3. Explain the circumstances in which each It Depends statement is true and when it is false.

1. People who engage in regular physical activity are less likely to develop cardiovascular disease.	True	False	It Depends
2. People who engage in regular physical activity live longer.	True	False	It Depends
3. Coordination is closely related to balance.	True	False	It Depends
4. Regular physical activity has no effect on muscle strength.	True	False	It Depends
5. You should stretch before engaging in any type of physical activity.	True	False	It Depends
6. All high school students participate in physical education classes.	True	False	It Depends
7. If you are just starting an exercise program, you should begin by exercising for long periods of time to give yourself confidence to continue.	True	False	It Depends
8. Engaging in physical activity leads to better academic performance.	True	False	It Depends
9. Drinking high-calorie juices, sodas, or sports drinks is the best way to hydrate your body while working out.	True	False	It Depends
10. The acronym FITT stands for frequency, intensity, time, and type.	True	False	It Depends

Setting the Scene

What types of physical activity have you engaged in during the last month? Did you go for a walk, jog, or bike ride? Did you participate in a team or individual sport? Did you dance with friends at a party? Did you vacuum, sweep, or rake leaves?

These are all examples of physical activity. Physical activity is any type of action that requires movement, during which your body expends energy. This chapter examines the benefits of physical activity, different types of physical fitness, and strategies for safely increasing fitness and avoiding injury.

