Principles of Physical Fitness

Looking Ahead.......

After reading this chapter, you should be able to:

- Describe how much physical activity is recommended for developing health and fitness
- Identify the components of physical fitness and the way each component affects wellness
- Explain the goal of physical training and the basic principles of training
- Describe the principles involved in designing a well-rounded exercise program
- List the steps that can be taken to make an exercise program safe, effective, and successful

Test Your Knowledge

1. To improve your health, you must exercise vigorously for at least 30 minutes straight, 5 or more days per week. True or false?

2. Which of the following activities uses about 150 calories?
   a. washing a car for 45–60 minutes
   b. shooting a basketball for 30 minutes
   c. jumping rope for 15 minutes

3. Regular exercise can make a person smarter. True or false?

Answers

1. FALSE. Experts recommend 150 minutes of moderate physical activity per week, but activity can be done in short bouts—10-minute sessions, for example—spread out over the course of the day.

2. ALL THREE. The more intense an activity is, the more calories it burns in a given amount of time. This is one reason that people who exercise vigorously can get the same benefits in less time than people who exercise at a moderate intensity.

3. TRUE. Regular exercise (even moderate-intensity exercise) benefits the human brain and nervous system in a variety of ways. For example, exercise improves cognitive function—that is, the brain’s ability to learn, remember, think, and reason.
ny list of the benefits of physical activity is impressive. Although people vary greatly in physical fitness and performance ability, the benefits of regular physical activity are available to everyone.

This chapter provides an overview of physical fitness. It explains how both lifestyle physical activity and more formal exercise programs contribute to wellness. It also describes the components of fitness, the basic principles of physical training, and the essential elements of a well-rounded exercise program. Chapters 3–6 provide an in-depth look at each of the elements of a fitness program; Chapter 7 puts these elements together in a complete, personalized program.

PHYSICAL ACTIVITY AND EXERCISE FOR HEALTH AND FITNESS

Despite the many benefits of an active lifestyle, levels of physical activity remain low for all populations of Americans (Figure 2.1). In December 2008, the Centers for Disease Control and Prevention (CDC) reported the following statistics about the physical activity levels of adult Americans:

- About 31% participate in some leisure-time physical activity.
- Leisure-time physical activity decreased by nearly 6% between 2003 and 2009. Physical activity levels decline with age, are higher in men than in women, and are lower in Hispanics, American Indians, and blacks than in whites. Approximately 40% of Americans participate in no leisure-time physical activity—a level that has remained steady for a decade.
- People with higher levels of education are more active than people with lower educational attainment. For example, 54% of college graduates exercise regularly, compared with 37% of high school dropouts.
- About 12% of Americans report exercising vigorously for more than 20 minutes, three times per week. However, electronic measurements of people involved in normal daily activity showed that the actual number is closer to 3%.

Possible barriers to increased activity include lack of time and resources, social and environmental influences, and—most important—lack of motivation and commitment (see Lab 2.2 for more on barriers). Some people also fear injury. Although physical activity carries some risks, the risks of inactivity are far greater. Increased physical activity may be the single most important lifestyle behavior for promoting health and well-being.

Physical Activity on a Continuum

Physical activity is movement carried out by the skeletal muscles that requires energy. Different types of physical activity can vary by ease or intensity. Standing up or walking down a hallway require little energy or effort. More intense, sustained activities, such as cycling 5 miles or running a race, require considerably more.

Exercise refers to planned, structured, repetitive movement intended specifically to improve or maintain physical fitness. As discussed in Chapter 1, physical fitness is a set of physical attributes that allows the body to respond or adapt to the demands and stress of physical effort—to perform moderate to vigorous levels of physical activity without becoming overly tired. Levels of fitness depend on such physiological factors as the heart’s ability to pump blood and the energy-generating capacity of the cells. These factors depend on genetics—a person’s inborn potential for physical fitness—and behavior—getting enough physical activity to stress the body and cause long-term physiological changes.

Physical activity is essential to health and confers wide-ranging health benefits, but exercise is necessary to significantly improve physical fitness. This important
Is Exercise Good for Your Brain?

We have long known that exercise is good for the muscles, bones, and heart. But what about the brain? Can exercise improve your brain’s health and function? Can it ward off dementia? Can exercise even make you smarter? A growing body of research indicates that the answer to all these questions may be yes.

Some scientists, in fact, are now calling exercise the new “brain food.” A variety of studies—including large-scale studies funded by the National Institute on Aging—show that even moderate physical activity can improve brain health and function and may delay the decline in cognitive function that occurs for many people as they age. Recent evidence shows that regular physical activity has the following positive effects on the human brain:

- Exercise improves cognitive function—that is, the brain’s ability to learn, remember, think, and reason.
- Exercise can be used to overcome the negative effects of a poor diet (for example, a diet high in saturated fats) on brain health.
- Exercise promotes the creation of new nerve cells (neurons) in the brain and throughout the nervous system. By promoting this process (called neurogenesis), exercise provides some protection against injury and degenerative conditions that can destroy neurons.
- Exercise enhances the entire nervous system’s plasticity—that is, its ability to change and adapt. In the brain, spinal cord, and nerves, this can mean developing new or different pathways for transmitting sensory information or motor commands.
- Exercise appears to have a protective effect on the brain as people age, helping to delay or even prevent the onset of neurodegenerative disorders such as Alzheimer’s disease.

Although most people consider brain health to be a concern for the elderly, it is vital to wellness throughout life. For this reason, many studies on exercise and brain health include children as well as older adults. Targeted research has also focused on the impact of exercise on people with disorders such as cerebral palsy, multiple sclerosis, and developmental disabilities. Generally speaking, these studies all reach a similar conclusion: Exercise enhances brain health, at least to some degree, in people of all ages and a wide range of health statuses.

Along with the brain’s physical health, exercise has a positive effect on mental health. The 2008 Physical Activity Guidelines Advisory Committee Report cited numerous studies on the relationship between physical activity and mental health (see Chapter 10 for more on this relationship). The overall message was that exercise—even modest activity such as taking a daily walk—can help combat a variety of mental health disorders.

It’s hard to underestimate the impact of physical and mental disorders related to brain health. According to the Alzheimer’s Association, 5.3 million Americans currently suffer from Alzheimer’s disease and the number is increasing at a rate of 70 people per second. People with depression, anxiety, or other mental disorders are more likely to suffer from chronic physical conditions. Taken together, these and other brain-related disorders cost untold millions of dollars in health care costs and lost productivity, as well as thousands of years of productive lifetime lost.

So, for the sake of your brain—as well as your muscles, bones, and heart—start creating your exercise program soon. You’ll be healthier, and you may even feel a little smarter.

Sources:


The distinction between physical activity, which improves health and wellness, and exercise, which improves fitness, is a key concept in understanding the guidelines discussed in this section.

Increasing Physical Activity to Improve Health and Wellness In 2008, the U.S. Department of Health and Human Services issued Physical Activity Guidelines for Americans, which made specific recommendations for promoting health (you can read the report at www.health.gov/paguidelines). The report stressed the importance of regular physical activity and emphasized that some physical activity is better than none. The report also presented evidence that regular activity promotes health and prevents premature death and a variety of diseases (see the box “Is Exercise Good for Your Brain?”). The guidelines followed previous recommendations from the United States Surgeon General (issued in 1996), the Department of Health and Human Services (2005), and the American College of Sports Medicine.
Medical and American Heart Association (2007). Physical Activity Guidelines for Americans includes the following key guidelines for adults:

- For substantial health benefits, adults should do at least 150 minutes (2 ½ hours) a week of moderate-intensity aerobic physical activity, or 75 minutes (1 hour and 15 minutes) a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity aerobic activity. Activity should preferably be spread throughout the week.

- For additional and more extensive health benefits, adults should increase their aerobic physical activity to 300 minutes (5 hours) a week of moderate-intensity activity, or 150 minutes a week of vigorous-intensity activity, or an equivalent combination of moderate- and vigorous-intensity activity. Additional health benefits are gained by engaging in physical activity beyond this amount.

- Adults should also do muscle-strengthening activities that are moderate or high intensity and involve all major muscle groups on 2 or more days a week, as these activities provide additional health benefits.

- All adults should avoid inactivity.

The report stated that physical activity benefits people of all ages and of all studied racial and ethnic groups, including people with disabilities. The report emphasized that the benefits of activity outweigh the dangers.

These levels of physical activity promote health and wellness by lowering the risk of high blood pressure, stroke, heart disease, type 2 diabetes, colon cancer, and osteoporosis and by reducing feelings of mild to moderate depression and anxiety.

What exactly is moderate physical activity? Activities such as brisk walking, dancing, swimming, cycling, and yard work can all count toward the daily total. A moderate amount of activity uses about 150 calories of energy and causes a noticeable increase in heart rate, such as would occur with a brisk walk. Examples of activities that use about 150 calories are shown in Figure 2.2. You can burn the same number of calories by doing a lower-intensity activity for a longer time or a higher-intensity activity for a shorter time.

In contrast to moderate-intensity activity, vigorous physical activity causes rapid breathing and a substantial increase in heart rate, as exemplified by jogging. Physical activity and exercise recommendations for promoting general health, fitness, and weight management are shown in Table 2.1. Examples of light, moderate, and vigorous activities are given in the box “Classifying Activity Levels.”

The daily total of physical activity can be accumulated in multiple bouts of 10 or more minutes per day—for example, two 10-minute bike rides to and from class and a brisk 10-minute walk to the store. In this lifestyle

**FIGURE 2.2 Examples of moderate amounts of physical activity.** Each example uses about 150 calories.

Assessing your physical activity level is easier if you know how to classify different kinds of activities. Fitness experts categorize activities into the following three levels:

- **Light activity** includes the routine tasks associated with typical day-to-day life, such as vacuuming, walking slowly, shopping, or stretching. You probably perform dozens of light activities every day without even thinking about it. You can gain significant health benefits by turning light activities into moderate activities—by walking briskly instead of slowly, for example.

- **Moderate activity** causes your breathing and heart rate to accelerate but still allows for comfortable conversation, such as walking at 3–4 miles per hour. It is sometimes described as activity that can be performed comfortably for about 45 minutes. Examples of moderate physical activity include brisk walking, social dancing, and cycling moderately on level terrain.

- **Vigorous activity** elevates your heart and breathing rates considerably and has other physical effects that improve your fitness level. Examples include jogging, hiking uphill, swimming laps, and playing most competitive sports.

---

**Table 2.1 Physical Activity and Exercise Recommendations for Promoting General Health, Fitness, and Weight Management**

<table>
<thead>
<tr>
<th>GOAL</th>
<th>RECOMMENDATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>General health</td>
<td>Perform moderate-intensity aerobic physical activity for at least 150 minutes per week or 75 minutes of vigorous-intensity physical activity per week. Examples of moderate-intensity physical activity include brisk walking, water aerobics, tennis (doubles), dancing, and cycling less than 10 miles per hour. Examples of vigorous-intensity physical activity include jogging, power-walking, tennis (singles), jumping rope, hiking uphill, and cycling faster than 10 miles per hour. Also, be more active in your daily life: walk instead of driving, take the stairs, and watch less television.</td>
</tr>
<tr>
<td>Increased health benefits</td>
<td>Exercise at moderate intensity for 300 minutes per week or at vigorous intensity for 150 minutes per week.</td>
</tr>
<tr>
<td>Achieve or maintain weight loss</td>
<td>Exercise moderately for 60–90 minutes per day on most days of the week.</td>
</tr>
<tr>
<td>Muscle strength and endurance</td>
<td>Perform resistance exercises at least 2 nonconsecutive days per week. Examples include weight training and exercises that use body weight as resistance (such as core stabilizing exercises, pull-ups, push-ups, and squats).</td>
</tr>
<tr>
<td>Flexibility</td>
<td>Perform range-of-motion (stretching) exercises at least 2 days per week.</td>
</tr>
</tbody>
</table>


---

An approach to physical activity, people can choose activities that they find enjoyable and that fit into their daily routine; everyday tasks at school, work, and home can be structured to contribute to the daily activity total. If all Americans who are currently sedentary were to increase their lifestyle physical activity to 30 minutes per day, there would be an enormous benefit to public health and to individual well-being.

**Increasing Physical Activity to Manage Weight** Because two-thirds of Americans are overweight, the U.S. Department of Health and Human Services has also published physical activity guidelines focusing on weight management. These guidelines recognize that for people who need to prevent weight gain, lose weight, or maintain weight loss, 150 minutes per week of physical activity may not be enough. Instead, they recommend up to 90 minutes of physical activity per day.

**Exercising to Improve Physical Fitness** As mentioned earlier, moderate physical activity confers significant health and wellness benefits, especially for those who are currently sedentary and become moderately active. However, people can obtain even greater health and wellness benefits by increasing the duration and intensity of physical activity. With increased activity, they will see more improvements in quality of life and greater reductions in disease and mortality risk.

More vigorous activity, as in a structured, systematic exercise program, is also needed to improve physical fitness; moderate physical activity alone is not enough. Physical fitness requires more intense movement that poses a substantially greater challenge to the body. The American College of Sports Medicine issued guidelines in 2006 and again in 2009 for creating a formal exercise program that will develop physical fitness. These guidelines are described in detail later in the chapter.
How Much Physical Activity is Enough?

Some experts feel that people get most of the health benefits of physical activity simply by becoming more active over the course of the day; the amount of activity needed depends on an individual’s health status and goals. Other experts feel that leisure-time physical activity is not enough; they argue that people should exercise long enough and intensely enough to improve their body’s capacity for exercise—that is, to improve physical fitness. There is probably some truth in both of these positions.

Regular physical activity, regardless of the intensity, makes you healthier and can help protect you from many chronic diseases. Although you get many of the health benefits of exercise simply by being more active, you obtain even more benefits when you are physically fit. In addition to long-term health benefits, fitness also contributes significantly to quality of life. Fitness can give you freedom to move your body the way you want. Fit people have more energy and better body control. They can enjoy a more active lifestyle than their more sedentary counterparts. Even if you don’t like sports, you need physical energy and stamina in your daily life and for many nonsport leisure activities such as visiting museums, playing with children, gardening, and so on.

Where does this leave you? Most experts agree that some physical activity is better than none, but that more—as long as it does not result in injury—is better than some. To set a personal goal for physical activity and exercise, consider your current activity level, your health status, and your overall goals. At the very least, strive to become more active and get 30 minutes of moderate-intensity activity at least 5 days per week. Choose to be active whenever you can. If weight management is a concern for you, begin by achieving the goal of 30 minutes of activity per day and then try to raise your activity level further, to 60–90 minutes per day or more. For even better health and well-being, participate in a structured exercise program that develops physical fitness. Any increase in physical activity will contribute to your health and well-being, now and in the future.

Health-related Components of Physical Fitness

Some components of fitness are related to specific activities, and others relate to general health. Health-related fitness includes the following components:

- Cardiorespiratory endurance
- Muscular strength
- Muscular endurance
- Flexibility
- Body composition

Health-related fitness helps you withstand physical challenges and protects you from diseases.

Cardiorespiratory Endurance

Cardiorespiratory endurance is the ability to perform prolonged, large-muscle, dynamic exercise at moderate to high levels of intensity. It depends on such factors as the ability of the lungs to deliver oxygen from the environment to the bloodstream, the capacity of the heart to...
pump blood, the ability of the nervous system and blood vessels to regulate blood flow, and the capability of the body's chemical systems to use oxygen and process fuels for exercise.

When cardiorespiratory fitness is low, the heart has to work hard during normal daily activities and may not be able to work hard enough to sustain high-intensity physical activity in an emergency. As cardiorespiratory fitness improves, related physical functions also improve. For example:

- The heart pumps more blood per heartbeat.
- Resting heart rate slows.
- Blood volume increases.
- Blood supply to tissues improves.
- The body can cool itself better.
- Resting blood pressure decreases.

A healthy heart can better withstand the strains of everyday life, the stress of occasional emergencies, and the wear and tear of time.

Endurance training also improves the functioning of the body's chemical systems, particularly in the muscles and liver, thereby enhancing the body's ability to use energy supplied by food and to do more exercise with less effort from the oxygen transport system.

Cardiorespiratory endurance is a central component of health-related fitness because the functioning of the heart and lungs is so essential to overall good health. A person can't live very long or very well without a healthy heart. Poor cardiorespiratory fitness is linked with heart disease, type 2 diabetes, colon cancer, stroke, depression, and anxiety. A moderate level of cardiorespiratory fitness can help compensate for certain health risks, including excess body fat. People who are lean but who have low cardiorespiratory fitness have been found to have higher death rates than people with higher levels of body fat who are otherwise fit.

You can develop cardiorespiratory endurance through activities that involve continuous, rhythmic movements of large-muscle groups, such as the legs. Such activities include walking, jogging, cycling, and aerobic dancing.

Muscular Strength

Muscular strength is the amount of force a muscle can produce with a single maximum effort. It depends on such factors as the size of muscle cells and the ability of nerves to activate muscle cells. Strong muscles are important for everyday activities, such as climbing stairs, as well as for emergency situations. They help keep the skeleton in proper alignment, preventing back and leg pain and providing the support necessary for good posture. Muscular strength has obvious importance in recreational activities. Strong people can hit a tennis ball harder, kick a soccer ball farther, and ride a bicycle uphill more easily.

Muscular Endurance

Muscular endurance is the ability to resist fatigue and sustain a given level of muscle tension—that is, to hold a muscle contraction for a long time or to contract a muscle...
over and over again. It depends on such factors as the size of muscle cells, the ability of muscles to store fuel, and the blood supply to muscles.

Muscular endurance is important for good posture and for injury prevention. For example, if abdominal and back muscles can’t hold the spine correctly, the chances of low-back pain and back injury are increased. Good muscular endurance in the trunk muscles is more important than muscular strength for preventing back pain. Muscular endurance helps people cope with daily physical demands and enhances performance in sports and work.

**Flexibility**

Flexibility is the ability to move the joints through their full range of motion. It depends on joint structure, the length and elasticity of connective tissue, and nervous system activity. Flexible, pain-free joints are important for good health and well-being. Inactivity causes the joints to become stiffer with age. Stiffness, in turn, often causes older people to assume unnatural body postures that can stress joints and muscles. Stretching exercises can help ensure a healthy range of motion for all major joints.

**Body Composition**

Body composition refers to the proportion of fat and fat-free mass (muscle, bone, and water) in the body. Healthy body composition involves a high proportion of fat-free mass and an acceptably low level of body fat, adjusted for age and gender. A person with excessive body fat—especially excess fat in the abdomen—is more likely to experience health problems, including heart disease, insulin resistance, high blood pressure, stroke, joint problems, type 2 diabetes, gallbladder disease, blood vessel inflammation, some types of cancer, and back pain.

The best way to lose fat is through a lifestyle that includes a sensible diet and exercise. The best way to add muscle mass is through strength training. Large changes in body composition aren’t necessary to improve health; even a small increase in physical activity and a small decrease in body fat can lead to substantial health improvements.

**Skill-Related Components of Fitness**

In addition to the five health-related components of physical fitness, the ability to perform a particular sport or activity may depend on skill-related fitness components such as the following:

- **Speed**—the ability to perform a movement in a short period of time
- **Power**—the ability to exert force rapidly, based on a combination of strength and speed
- **Agility**—the ability to change the position of the body quickly and accurately
- **Balance**—the ability to maintain equilibrium while moving or while stationary
- **Coordination**—the ability to perform motor tasks accurately and smoothly using body movements and the senses
- **Reaction and movement time**—the ability to respond and react quickly to a stimulus

Skill-related fitness tends to be sport-specific and is best developed through practice. For example, the speed, coordination, and agility needed to play basketball can be developed by playing basketball. Some fitness experts contend that some sports don’t contribute to all the health-related components of physical fitness. However, engaging in sports is fun and can help you build fitness and contribute to other areas of wellness.
Physical fitness and athletic achievement are not limited to the able-bodied. People with disabilities can also attain high levels of fitness and performance, as shown by the elite athletes who compete in the Paralympics. The premier event for athletes with disabilities, the Paralympics are held in the same year and city as the Olympics. The performance of these skilled athletes makes it clear that people with disabilities can be active, healthy, and extraordinarily fit. Just like able-bodied athletes, athletes with disabilities strive for excellence and can serve as role models.

According to the U.S. Census Bureau, about 54 million Americans have some type of chronic disability. Some disabilities are the result of injury, such as spinal cord injuries sustained in car crashes or war. Other disabilities result from illness, such as the blindness that sometimes occurs as a complication of diabetes or the joint stiffness that accompanies arthritic. And some disabilities are present at birth, as in the case of congenital limb deformities or cerebral palsy.

Exercise and physical activity are as important for people with disabilities as for able-bodied individuals—if not more

**PRINCIPLES OF PHYSICAL TRAINING: ADAPTATION TO STRESS**

The human body is very adaptable. The greater the demands made on it, the more it adjusts to meet those demands. Over time, immediate, short-term adjustments translate into long-term changes and improvements. When breathing and heart rate increase during exercise, for example, the heart gradually develops the ability to pump more blood with each beat. Then, during exercise, it doesn’t have to beat as fast to meet the cells’ demands for oxygen. The goal of physical training is to produce these long-term changes and improvements in the body’s functioning. Although people differ in the maximum levels of physical fitness and performance they can achieve through training, the wellness benefits of exercise are available to everyone (see the box “Fitness and Disability”).

Particular types and amounts of exercise are most effective in developing the various components of fitness. To put together an effective exercise program, you should first understand the basic principles of physical training, including the following:

- Specificity
- Progressive overload
- Reversibility
- Individual differences

All of these rest on the larger principle of adaptation.

**TERMS**

- **flexibility** The ability to move joints through their full range of motion.
- **body composition** The proportion of fat and fat-free mass (muscle, bone, and water) in the body.
- **fat-free mass** The nonfat component of the human body, consisting of skeletal muscle, bone, and water.
- **skill-related fitness** Physical capacities that contribute to performance in a sport or an activity: speed, power, agility, balance, coordination, and reaction time.
- **physical training** The performance of different types of activities that cause the body to adapt and improve its level of fitness.

**Specificity—Adapting to Type of Training**

To develop a particular fitness component, you must perform exercises that are designed specifically for that component. This is the principle of **specificity**. Weight training, for example, develops muscular strength but is less effective for developing cardiorespiratory endurance or flexibility. Specificity also applies to the skill-related fitness components—to improve at tennis, you must practice tennis—and to the different parts of the body—to develop stronger arms, you must exercise your arms. A well-rounded exercise program includes exercises geared to each component of fitness, to different parts of the body, and to specific activities or sports.

**Progressive Overload—Adapting to Amount of Training and the FITT Principle**

The body adapts to the demands of exercise by improving its functioning. When the amount of exercise (also called **overload** or **stress**) is increased progressively, fitness continues to improve. This is the principle of **progressive overload**.

The amount of overload is important. Too little exercise will have no effect on fitness (although it may improve health); too much may cause injury and problems with the body’s immune system and hormone levels. The point at which exercise becomes excessive is highly individual; it occurs at a much higher level in an Olympic athlete than in a sedentary person. For every type of exercise, there is a training threshold at which fitness benefits begin to occur, a zone within which maximum fitness benefits occur, and an upper limit of safe training.

The amount of exercise needed depends on the individual’s current level of fitness, the person’s genetically determined capacity to adapt to training, his or her fitness goals, and the component being developed. A novice, for example, might experience fitness benefits from jogging a mile in 10 minutes, but this level of exercise would cause no physical adaptations in a trained distance runner. Beginners should start at the lower end of the fitness benefit zone; fitter individuals will make more rapid gains by exercising at the higher end of the fitness benefit zone. Progression is critical because fitness increases only if the volume and intensity of workouts increase. Exercising at the same intensity every training session will maintain fitness but will not increase it, because the training stress is below the threshold required to produce adaptation.

The amount of overload needed to maintain or improve a particular level of fitness for a particular fitness component is determined through four dimensions, represented by the acronym **FITT**:

- **Frequency**—how often
- **Intensity**—how hard
- **Time**—how long (duration)
- **Type**—mode of activity

Chapters 3, 4, and 5 show you how to apply the FITT principle to exercise programs for cardiorespiratory endurance, muscular strength and endurance, and flexibility, respectively.

**Frequency**  
Developing fitness requires regular exercise. Optimum exercise frequency, expressed in number of days per week, varies with the component being developed and the individual’s fitness goals. For most people, a frequency of 3–5 days per week for cardiorespiratory endurance exercise and 2 or more days per week for resistance and flexibility training is appropriate for a general fitness program.

An important consideration in determining appropriate exercise frequency is recovery time, which is also highly individual and depends on factors such as training experience, age, and intensity of training. For example, 24 hours of rest between highly intensive workouts that involve heavy weights or track sprints is not enough recovery time for safe and effective training. Intense workouts need to be spaced out during the week to allow for sufficient recovery time. On the other hand, you can exercise every day if your program consists of moderate-intensity walking or cycling. Learn to “listen to your body” to get enough rest between...
workouts. Chapters 3–5 provide more detailed information about training techniques and recovery periods for workouts focused on different fitness components.

**Intensity**  
Fitness benefits occur when a person exercises harder than his or her normal level of activity. The appropriate exercise intensity varies with each fitness component. To develop cardiorespiratory endurance, for example, you must raise your heart rate above normal. To develop muscular strength, you must lift a heavier weight than normal. To develop flexibility, you must stretch muscles beyond their normal length.

**Time (Duration)**  
Fitness benefits occur when you exercise for an extended period of time. For cardiorespiratory endurance exercise, 20–60 minutes is recommended. Exercise can take place in a single session or in several sessions of 10 or more minutes. The greater the intensity of exercise, the less time needed to obtain fitness benefits. For high-intensity exercise, such as running, 20–30 minutes is appropriate. For moderate-intensity exercise, such as walking, 45–60 minutes may be needed. High-intensity exercise poses a greater risk of injury than low-intensity exercise, so if you are a nonathletic adult, it’s probably best to emphasize low- to moderate-intensity activity of longer duration.

To build muscular strength, muscular endurance, and flexibility, similar amounts of time are advisable, but these exercises are more commonly organized in terms of a specific number of repetitions of particular exercises. For resistance training, for example, a recommended program includes one or more sets of 8–12 repetitions of 8–10 different exercises that work the major muscle groups.

**Type (Mode of Activity)**  
The type of exercise in which you should engage varies with each fitness component and with your personal fitness goals. To develop cardiorespiratory endurance, you need to engage in continuous activities involving large-muscle groups—walking, jogging, cycling, or swimming, for example. Resistance exercises develop muscular strength and endurance, while stretching exercises build flexibility. The frequency, intensity, and time of the exercise will be different for each type of activity. (See pp. 39–41 for more on choosing appropriate activities for your fitness program.)

**Reversibility—Adapting to a Reduction in Training**

Fitness is a reversible adaptation. The body adjusts to lower levels of physical activity the same way it adjusts to higher levels. This is the principle of reversibility. When a person stops exercising, up to 50% of fitness improvements are lost within 2 months. However, not all fitness levels reverse at the same rate. Strength fitness is very resilient, so a person can maintain strength fitness by doing resistance exercise as infrequently as once a week. On the other hand, cardiovascular and cellular fitness reverse themselves more quickly—sometimes within just a few days or weeks. If you must temporarily curtail your training, you can maintain your fitness improvements by keeping the intensity of your workouts constant while reducing their frequency or duration.

**Individual Differences—Limits on Adaptability**

Anyone watching the Olympics can see that, from a physical standpoint, we are not all created equal. There are large individual differences in our ability to improve fitness, achieve a desirable body composition, and learn and perform sports skills. Some people are able to run longer distances, or lift more weight, or kick a soccer ball more skillfully than others will ever be able to, no matter how much they train. People respond to training at different

---

**Terms:**

- **specificity**  
The training principle that the body adapts to the particular type and amount of stress placed on it.

- **progressive overload**  
The training principle that placing increasing amounts of stress on the body causes adaptations that improve fitness.

- **reversibility**  
The training principle that fitness improvements are lost when demands on the body are lowered.
Participating in exercise and sports is usually a wonderful experience that improves wellness in both the short and long term. In rare instances, however, vigorous exertion is associated with sudden death. It may seem difficult to understand that although regular exercise protects people from heart disease, it also increases the risk of sudden death.

Congenital heart defects (heart abnormalities present at birth) are the most common cause of exercise-related sudden death in people under 35. In nearly all other cases, coronary artery disease is responsible. In this condition, fat and other substances build up in the arteries that supply blood to the heart. Death can result if an artery becomes blocked or if the heart’s rhythm and pumping action are disrupted. Exercise, particularly intense exercise, may trigger a heart attack in someone with underlying heart disease.

A study of jogging deaths in Rhode Island found that there was one death per 396,000 hours of jogging, or about one death per 7620 joggers per year—an extremely low risk for each individual jogger. Another study of men involved in a variety of physical activities found one death per 1.51 million hours of exercise. This 12-year study of more than 21,000 men found that those who didn’t exercise vigorously were 74 times more likely to die suddenly from cardiac arrest during or shortly after exercise. It is also important to note that people are much safer exercising than engaging in many other common activities, including driving a car.

Although quite small, the risk does exist and may lead some people to wonder why exercise is considered such an important part of a wellness lifestyle. Exercise causes many positive changes in the body—in healthy people as well as those with heart disease—that more than make up for the slightly increased short-term risk of sudden death. Training slows or reverses the fatty buildup in arteries and helps protect people from deadly heart rhythm abnormalities. People who exercise regularly have an overall risk of sudden death only about two-thirds that of nonexercisers. Active people who stop exercising can expect their heart attack risk to increase by 300%.

Obviously, someone with underlying coronary artery disease is at greater risk than someone who is free from the condition. However, many cases of heart disease go undiagnosed. The riskiest scenario may involve the middle-aged or older individual who suddenly begins participating in a vigorous sport or activity after being sedentary for a long time. This finding provides strong evidence for the recommendation that people increase their level of physical activity gradually and engage in regular, rather than sporadic, activity.

---

**Exercise and Cardiac Risk**

---

**DESIGNING YOUR OWN EXERCISE PROGRAM**

Physical training works best when you have a plan. A plan helps you make gradual but steady progress toward your goals. Once you’ve determined that exercise is safe for you, planning for physical fitness consists of assessing how fit you are now, determining where you want to be, and choosing the right activities to help you get there.

**Getting Medical Clearance**

People of any age who are not at high risk for serious health problems can safely exercise at a moderate intensity (60% or less of maximum heart rate) without a prior medical evaluation (see Chapter 3 for a discussion of maximum heart rate). Likewise, if you are male and under 40 or female and under 50 and in good health, exercise is probably safe for you. If you do not fit into these age groups or if you have health problems—especially high blood pressure, heart disease, muscle or joint problems, or obesity—see your physician before starting a vigorous exercise program. The Canadian Society for Exercise Physiology has developed the Physical Activity Readiness

---

**Ask Yourself:**

Many people who play sports have had the experience of realizing that they are not as physically gifted as a teammate or that they are never going to be in the Olympics. What can you say to encourage someone who is discouraged by this realization? What benefits of physical activity, exercise, and sports might you point out?
Sedentary Activities
Do infrequently
Watching television, surfing the Internet, talking on the telephone

Strength Training
2–3 nonconsecutive days per week (all major muscle groups)
Bicep curls, push-ups, abdominal curls, bench press, calf raises

Flexibility Training
At least 2–3 days per week, ideally 5–7 days per week (all major joints)
Calf stretch, side lunge, step stretch, hurdler stretch

Cardiorespiratory Endurance Exercise
3–5 days per week (20–60 minutes per day)
Walking, jogging, bicycling, swimming, aerobic dancing, in-line skating, cross-country skiing, dancing, basketball

Moderate-Intensity Physical Activity
150 minutes per week; for weight loss or prevention of weight regain following weight loss, 60–90 minutes per day
Walking to the store or bank, washing windows or your car, climbing stairs, working in your yard, walking your dog, cleaning your room

FIGURE 2.3 Physical activity pyramid.

Questionnaire (PAR-Q) to help evaluate exercise safety; it is included in Lab 2.1. Completing it should alert you to any potential problems you may have. If a physician isn’t sure whether exercise is safe for you, she or he may recommend an exercise stress test or a graded exercise test (GXT) to see whether you show symptoms of heart disease during exercise. For most people, however, it’s far safer to exercise than to remain sedentary. For more information, see the box “Exercise and Cardiac Risk.”

Assessing Yourself

The first step in creating a successful fitness program is to assess your current level of physical activity and fitness for each of the five health-related fitness components. The results of the assessment tests will help you set specific fitness goals and plan your fitness program. Lab 2.3 gives you the opportunity to assess your current overall level of activity and determine if it is appropriate. Assessment tests in Chapters 3–6 will help you evaluate your cardiorespiratory endurance, muscular strength, muscular endurance, flexibility, and body composition.

Setting Goals

The ultimate general goal of every health-related fitness program is the same—wellness that lasts a lifetime. Whatever your specific goals, they must be important enough to you to keep you motivated. Most sports psychologists believe that setting and achieving goals is the most effective way to stay motivated about exercise. (Refer to Chapter 1 for more on goal setting, as well as Common Questions Answered at the end of this chapter.) After you complete the assessment tests in Chapters 3–6, you will be able to set goals directly related to each fitness component, such as working toward a 3-mile jog or doing 20 push-ups. First, though, think carefully about your overall goals, and be clear about why you are starting a program.

Choosing Activities for a Balanced Program

An ideal fitness program combines a physically active lifestyle with a systematic exercise program to develop and maintain physical fitness. This overall program is shown in the physical activity pyramid in Figure 2.3. If you are currently sedentary, your goal should be to focus on activities at the bottom of the pyramid and gradually increase the amount of moderate-intensity physical activity in your daily life. Appropriate activities include walking briskly, climbing stairs, doing yard work, and

exercise stress test A test usually administered on a treadmill or cycle ergometer that involves analysis of the changes in electrical activity in the heart from an electrocardiogram (EKG or ECG) taken during exercise; used to determine if any heart disease is present and to assess current fitness level.

graded exercise test (GXT) An exercise test that starts at an easy intensity and progresses to maximum capacity.
health-related components of fitness: a balanced program includes activities to develop all the

The next two levels of the pyramid illustrate parts of a formal exercise program. The principles of this program are consistent with those of the American College of Sports Medicine, the professional organization for people involved in sports medicine and exercise science. The ACSM has established guidelines for creating an exercise program that will develop physical fitness (Table 2.2). A balanced program includes activities to develop all the health-related components of fitness:

- **Cardiorespiratory endurance** is developed by continuous rhythmic movements of large-muscle groups in activities such as walking, jogging, cycling, swimming, and aerobic dance and other forms of group exercise. Choose activities that you enjoy and that are convenient. Other popular choices are in-line skating, dancing, and backpacking. Start-and-stop activities such as tennis, racquetball, and soccer can also develop cardiorespiratory endurance if your skill level is sufficient to enable periods of continuous play. Training for cardiorespiratory endurance is discussed in Chapter 3.
  - **Muscular strength and endurance** can be developed through resistance training—training with weights or performing calisthenic exercises such as push-ups and curl-ups. Training for muscular strength and endurance is discussed in Chapter 4.
  - **Flexibility** is developed by stretching the major muscle groups regularly and with proper technique. Flexibility is discussed in Chapter 5.
  - **Healthy body composition** can be developed through a sensible diet and a program of regular exercise. Cardiorespiratory endurance exercise is best for reducing body fat; resistance training builds muscle mass, which, to a small extent, helps increase metabolism. Body composition is discussed in Chapter 6.

Chapter 7 contains guidelines to help you choose activities and put together a complete exercise program that will suit your goals and preferences. (Refer to Figure 2.4 for a summary of the health and fitness benefits of different levels of physical activity.)

What about the tip of the activity pyramid? Although sedentary activities are often unavoidable—attending
class, studying, working in an office, and so on—many people choose inactivity over activity during their leisure time. Change sedentary patterns by becoming more active whenever you can. Move more and sit less.

**Guidelines for Training**

The following guidelines will make your exercise program more effective and successful.

**Train the Way You Want Your Body to Change** Stress your body so it adapts in the desired manner. To have a more muscular build, lift weights. To be more flexible, do stretching exercises. To improve performance in a particular sport, practice that sport or its movements.

**Train Regularly** Consistency is the key to improving fitness. Fitness improvements are lost if too much time passes between exercise sessions.

**Start Slowly, and Get in Shape Gradually** As Figure 2.5 shows, an exercise program can be divided into three phases:

- **Beginning phase.** The body adjusts to the new type and level of activity.
- **Progress phase.** Fitness increases.
- **Maintenance phase.** The targeted level of fitness is sustained over the long term.

When beginning a program, start slowly to give your body time to adapt to the stress of exercise. Choose activities carefully according to your fitness status. If you have been sedentary or are overweight, try an activity such as walking or swimming that won’t jar the body or strain the joints.

As you progress, increase duration and frequency before increasing intensity. If you train too much or too intensely, you are more likely to suffer injuries or become overtrained, a condition characterized by lack of energy,

<table>
<thead>
<tr>
<th>Description</th>
<th>Sample activities or program</th>
<th>Health and fitness benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifestyle physical activity</td>
<td>Moderate physical activity (150 minutes per week; muscle-strengthening exercises 2 or more days per week)</td>
<td>Better blood cholesterol levels, reduced body fat, better control of blood pressure, improved metabolic health, and enhanced glucose metabolism; improved quality of life; reduced risk of some chronic diseases</td>
</tr>
<tr>
<td>Moderate exercise program</td>
<td>Cardiorespiratory endurance exercise (20–60 minutes, 3–5 days per week); strength training (2–3 nonconsecutive days per week); and stretching exercises (2 or more days per week)</td>
<td>All the benefits of lifestyle physical activity, plus improved physical fitness (increased cardiorespiratory endurance, muscular strength and endurance, and flexibility) and even greater improvements in health and quality of life and reductions in chronic disease risk</td>
</tr>
<tr>
<td>Vigorous exercise program</td>
<td>Cardiorespiratory endurance exercise (20–60 minutes, 3–5 days per week); interval training; strength training (2–3 nonconsecutive days per week); and stretching exercises (3–6 days per week)</td>
<td>All the benefits of lifestyle physical activity and a moderate exercise program, with greater increases in fitness and somewhat greater reductions in chronic disease risk</td>
</tr>
</tbody>
</table>

**FIGURE 2.4 Health and fitness benefits of different amounts of physical activity and exercise.**
Warming up can decrease warm-up before exercise can become and then remain physically fit. To get in shape as quickly as possible but to gradually exercise program and impede motivation. The goal is not performance. Injuries and overtraining slow down an exercise. A warm-up should include low-intensity, whole-body movements similar to those used in the activity that will follow. For example, runners may walk and jog slowly prior to running at full speed. A tennis player might hit forehands and backhands at a low intensity before playing a vigorous set of tennis. A warm-up is not the same as a stretching workout. For safety and effectiveness, it is best to stretch after an endurance or strength training workout, when muscles are warm—and not as part of a warm-up. (Appropriate and effective warm-ups are discussed in greater detail in Chapters 3–5.)

**Cool Down After Exercise** During exercise, as much as 90% of circulating blood is directed to the muscles and skin, up from as little as 20% during rest. If you suddenly stop moving after exercise, the amount of blood returning to your heart and brain may be insufficient, and you may experience dizziness, a drop in blood pressure, or other problems. Cooling down at the end of a workout helps safely restore circulation to its normal resting condition. So don’t sit or lie down or jump into the shower after exercise without cooling down first. Cool down by continuing to move at a slow pace—walking, for example—for 5–10 minutes, as your heart and breathing rate slowly return to normal. At the end of the cool-down period, do stretching exercises while your muscles are still warm. Cool down longer after intense exercise sessions.

**Exercise Safely** Physical activity can cause injury or even death if you don’t consider safety. For example, you should always:

- Wear a helmet when biking, skiing, or rock climbing.
- Wear eye protection when playing racquetball or squash.
- Wear bright clothing when exercising on a public street.
- Walk or run with a partner in a park or on a deserted track.
- Give vehicles plenty of leeway, even when you have the right of way.

Overloading your muscles and joints can lead to serious injury, so train within your capacity. Use high-quality equipment and keep it in good repair. Report broken gym equipment to the health club manager. (See Appendix A for more information on personal safety.)

**Listen to Your Body and Get Adequate Rest** Rest can be as important as exercise for improving fitness. Fitness reflects an adaptation to the stress of exercise. Building fitness involves a series of exercise stresses, recuperation, and adaptation leading to improved fitness, followed by further stresses. Build rest into your training program, and don’t exercise if it doesn’t feel right. Sometimes you need a few days of rest to recover enough to train with the intensity required for improving fitness. Getting enough sleep is an important part of the recovery process. On the other hand, you can’t train sporadically, either. If you listen to your body and it always tells you to rest, you won’t make any progress.

**Cycle the Volume and Intensity of Your Workouts** To add enjoyment and variety to your program and to further improve fitness, don’t train at the same intensity during every workout. Train intensely on some days and train lightly on others. Proper management of workout intensity is a key to improving physical fitness. Use cycle training, also known as periodization, to provide enough

---

**FIGURE 2.5 Progression of an exercise program.** This figure shows how the amount of overload is increased gradually over time in a sample walking program. Regardless of the activity chosen, it is important that an exercise program begin slowly and progress gradually. Once you achieve the desired level of fitness, you can maintain it by exercising 3–5 days a week.

Vary Your Activities

Do you have a hard time thinking of new activities to try? Check the boxes next to the activities listed here that interest you. Then look for resources and facilities on your campus or in your community.

Outdoor Exercises
- Walking
- Running
- Cycling
- Swimming
- In-line skating
- Skateboarding
- Rowing
- Horseback riding
- Hiking
- Backpacking
- Ice skating
- Fly fishing

Exercises You Can Do at Home and Work
- Desk exercises
- Calisthenics
- Gardening
- Housework
- Yard work
- Sweeping the walkway
- Exploring on foot
- Entering a walk-a-thon
- Painting the walls
- Walking the dog
- Shopping
- Running errands

Sports and Games
- Basketball
- Tennis
- Volleyball
- Golf
- Soccer
- Softball
- Water skiing
- Windsurfing
- Badminton
- Ultimate Frisbee
- Bowling
- Surfing
- Dancing
- Snow skiing
- Gymnastics

Health Club Exercises
- Weight training
- Circuit training
- Group exercise
- Treadmill
- Stationary bike
- Ski machine
- Supine bike
- Rowing machine
- Plyometrics
- Water aerobics
- Elliptical trainer
- Medicine ball
- Rope skipping
- Punching bag
- Racquetball

Vary Your Activities
Change your exercise program from time to time to keep things fresh and help develop a higher degree of fitness. The body adapts quickly to an exercise stress, such as walking, cycling, or swimming. Gains in fitness in a particular activity become more difficult with time. Varying the exercises in your program allows you to adapt to many types of exercise and develops fitness in a variety of activities. (see the box “Vary Your Activities”). Changing activities may also help reduce your risk of injury.

Train with a Partner
Training partners can motivate and encourage each other through rough spots and help each other develop proper exercise techniques. Training with a partner can make exercising seem easier and more fun. It can also help you keep motivated and on track. A commitment to a friend is a powerful motivator.

Train Your Mind
Becoming fit requires commitment, discipline, and patience. These qualities come from understanding the importance of exercise and having clear and reachable goals. Use the lifestyle management techniques discussed in Chapter 1 to keep your program on track.

Fuel Your Activity Appropriately
Good nutrition, including rehydration and resynthesis of liver and muscle carbohydrate stores, is part of optimal recuperation from exercise. Consume enough calories to support your exercise program without gaining body fat. Many studies show that consuming carbohydrates and protein before or after exercise promotes restoration of stored fuels and helps heal injured tissues so that you can exercise intensely again shortly. Nutrition for exercise is discussed in greater detail in Chapters 3 and 8.

Have Fun
You are more likely to stick with an exercise program if it’s fun. Choose a variety of activities that you enjoy. Some people like to play competitive sports, such as tennis, golf, or volleyball. Competition can boost motivation, but remember: Sports are competitive, whereas training for fitness is not. Other people like more solitary activities, such as jogging, walking, or swimming. Still others like high-skill individual sports, such as skiing, surfing, or skateboarding. Many activities can help you get fit, so choose the ones you enjoy. You can also boost your enjoyment and build your social support network by exercising with friends and family.

Track Your Progress
Monitoring the progress of your program can help keep you motivated and on track. Depending on the activities you’ve included in your program, you may track different measures of your program—minutes of jogging, miles of cycling, laps of swimming, number of push-ups, amount of weight...
Keep Your Exercise Program in Perspective  As important as physical fitness is, it is only part of a well-rounded life. You have to have time for work and school, family and friends, relaxation and hobbies. Some people become overinvolved in exercise and neglect other parts of their lives. They think of themselves as runners, dancers, swimmers, or triathletes rather than as people who participate in those activities. Balance and moderation are the key ingredients of a fit and well life.

SUMMARY

- Moderate daily physical activity contributes substantially to good health. Even without a formal, vigorous exercise program, you can get many of the same health benefits by becoming more physically active.
- If you are already active, you benefit even more by increasing the intensity or duration of your activities.

TIPS FOR TODAY AND THE FUTURE

Physical activity and exercise offer benefits in nearly every area of wellness. Even a low to moderate level of activity provides valuable health benefits. The important thing is to get moving!

RIGHT NOW YOU CAN

- Look at your calendar for the rest of the week and write in some physical activity—such as walking, running, biking, skating, swimming, hiking, or playing Frisbee—on as many days as you can. Schedule the activity for a specific time and stick to it.
- Call a friend and invite her or him to start planning a regular exercise program with you.

IN THE FUTURE YOU CAN

- Schedule a session with a qualified personal trainer who can evaluate your current fitness level and help you set personalized fitness goals.
- Create seasonal workout programs for the spring, summer, fall, and winter. Develop programs that are varied but consistent with your overall fitness goals.

FOR FURTHER EXPLORATION

BOOKS


JOURNALS

ACSM Health and Fitness Journal (401 West Michigan Street, Indianapolis, IN 46202; http://www.acsm-healthfitness.org)

Physician and Sportsmedicine (1235 Westlakes Drive, Suite 220, Berwyn, PA 19312; http://www.physportsmed.com)

• The five components of physical fitness most important for health are cardiorespiratory endurance, muscular strength, muscular endurance, flexibility, and body composition.
• Physical training is the process of producing long-term improvements in the body’s functioning through exercise. All training is based on the fact that the body adapts to physical stress.
• According to the principle of specificity, bodies change specifically in response to the type of training received.
• Bodies also adapt to progressive overload. When you progressively increase the frequency, intensity, and time (duration) of the right type of exercise, you become increasingly fit.
• Bodies adjust to lower levels of activity by losing fitness, a principle known as reversibility. To counter the effects of reversibility, it’s important to keep training at the same intensity, even if you have to reduce the number or length of sessions.
• According to the principle of individual differences, people vary in the maximum level of fitness they can achieve.
• When designing an exercise program, determine if medical clearance is needed, assess your current level of fitness, set realistic goals, and choose activities that develop all the components of fitness.
• Train regularly, get in shape gradually, warm up and cool down, maintain a structured but flexible program, exercise safely, consider training with a partner, train your mind, have fun, and keep exercise in perspective.
**COMMON QUESTIONS ANSWERED**

**Q** I have asthma. Is it OK for me to start an exercise program?

**A** Probably, but you should see your doctor before you start exercising, especially if you have been sedentary up to this point. Your personal physician can advise you on the type of exercise program that is best for you, given the severity of your condition, and how to avoid suffering exercise-related asthma attacks.

**Q** What should my fitness goals be?

**A** Begin by thinking about your general overall goals—the benefits you want to obtain by increasing your activity level and/or beginning a formal exercise program. Examples of long-term goals include reducing your risk of chronic diseases, increasing your energy level, and maintaining a healthy body weight.

To help shape your fitness program, you need to set specific, short-term goals based on measurable factors. These specific goals should be an extension of your overall goals—the specific changes to your current activity and exercise habits needed to achieve your general goals. In setting short-term goals, be sure to use the SMART criteria described in Chapter 1 (pp. 17–18). As noted there, your goals should be Specific, Measurable, Attainable, Realistic, and Time frame–specific (SMART).

You need information about your current levels of physical activity and physical fitness in order to set appropriate goals. The labs in this chapter will help you determine your physical activity level—for example, how many minutes per day you engage in moderate or vigorous activity or how many daily steps you take. Using this information, you can set goals for lifestyle physical activity to help you meet your overall goals. For example, if your general long-term goals are to reduce the risk of chronic disease and prevent weight gain, the Dietary Guidelines recommend 60 minutes of moderate physical activity daily. If you currently engage in 30 minutes of moderate activity daily, then your behavior change goal would be to add 30 minutes of daily physical activity (or an equivalent number of additional daily steps—about 3500–4000); your time frame for the change might be 8–12 weeks.

Labs in Chapters 3–6 provide opportunities to assess your fitness status for all the health-related components of fitness. The results of these assessments can guide you in setting specific fitness goals. For instance, if the labs in Chapter 4 indicate that you have good muscular strength and endurance in your lower body but poor strength and endurance in your upper body, then setting a specific goal for improving upper-body muscle fitness would be an appropriate goal—increasing the number of push-ups you can do from 22 to 30, for example. Chapters 3–6 include additional advice for setting appropriate goals.

Once you start your behavior change program, you may discover that your goals aren't quite appropriate—perhaps you were overly optimistic, or maybe you set the bar too low. There are limits to the amount of fitness you can achieve, but within the limits of your genes and health status, you can make significant improvements in fitness. Adjust your goals as needed.

**Q** How can I fit a workout into my day?

**A** Good time management is an important skill in creating and maintaining an exercise program. Choose a regular time to exercise, preferably the same time every day. Don’t tell yourself you’ll exercise “sometime during the day” when you have free time—that free time may never come. Schedule your workout, and make it a priority. Include alternative plans in your program to account for circumstances like bad weather or vacations.

**Q** Where can I get help and advice about exercise?

**A** One of the best places to get help is an exercise class. If you join a health club or fitness center, follow the guidelines in the box “Choosing a Fitness Center,” on p. 46. There, expert instructors can help you learn the basics of training and answer your questions. Make sure the instructor is certified by a recognized professional organization and/or has formal training in exercise physiology. Read articles by credible experts in fitness magazines. Many of these magazines include articles by leading experts in exercise science written at a layperson’s level.

A qualified personal trainer can also help you get started in an exercise program or a new form of training. Make sure this person has proper qualifications, such as certification by the ACSM, National Strength and Conditioning Association (NSCA), or American Council on Exercise (ACE). Don’t seek out a person for advice simply because he or she looks fit. UCLA researchers found that 60% of the personal trainers in their study couldn’t pass a basic exam on training methods, exercise physiology, or biomechanics. Trainers who performed best had college degrees in exercise physiology, physical education, or physical therapy. So choose your trainer carefully and don’t get caught up with fads or appearances.

**Q** Should I follow my exercise program if I’m sick?

**A** If you have a mild head cold or feel one coming on, it is probably OK to exercise moderately. Just begin slowly and see how you feel. However, if you have symptoms of a more serious illness—fever, swollen glands, nausea, extreme tiredness, muscle aches—wait until you have recovered fully before resuming your exercise program. Continuing to exercise while suffering from an illness more serious than a cold can compromise your recovery and may even be dangerous.

*For more Common Questions Answered about fitness, visit the Online Learning Center at www.mhhe.com/fahey*.
Choosing a Fitness Center

Fitness centers can provide you with many benefits—motivation and companionship are among the most important. A fitness center may also offer expert instruction and supervision as well as access to better equipment than you could afford on your own. There are an estimated 29,600 health clubs in the United States, serving more than 41.5 million members. All fitness centers, however, are not of the same overall quality. Many health facilities cater to people with very specific exercise or fitness goals. In other words, every fitness center is not for every person. If you’re thinking of joining a fitness center, here are some guidelines to help you choose a club that’s right for you.

Safety

- Find out if the facility offers some type of preactivity screening as well as basic fitness testing that includes cardiovascular screening.
- Determine if personnel are trained in CPR and if there is emergency equipment such as automated external defibrillators (AEDs) on the premises. An AED can help someone who has cardiac arrest.
- Ask if at least one staff member on each shift is trained in first aid.
- Find out if the club has an emergency plan in case a member has a heart attack or serious injury (many clubs do not). The facility should also have an evacuation plan, as well as established procedures for responding to other types of emergencies. All personnel should be trained in carrying out these plans.

Convenience

- Look for an established facility that’s within 10–15 minutes of your home or work. If it’s farther away, your chances of sticking to an exercise regimen start to diminish.
- Check out the facility’s hours, then visit it at the time you would normally exercise. Is there adequate parking? Will you have easy access to the equipment and exercise classes you want at that time?
- If needed, ask about child-care or youth programs. What services are available, and how are they supervised?

Atmosphere

- Look around to see if there are other members who are your age and at about your fitness level. Some clubs cater to a certain age group or lifestyle, such as hard-core bodybuilders.
- If you like to exercise to music, make sure you like the music played there, both its type and volume.
- Observe how the members dress. Will you fit in, or will you be uncomfortable?
- Observe the staff. Are they easy to identify? Are they friendly and helpful?
- Check to see that the facility is clean, including showers and lockers. Make sure the facility is climate controlled, well ventilated, and well lit.

Trained Personnel

- Determine if the personal trainers and fitness instructors are certified by a recognized professional association such as the American College of Sports Medicine (ACSM), Aerobics and Fitness Association of America (AFAA), or International Health, Racquet, and Sportsclub Association (IHRSA). All personal trainers are not equal; more than 100 organizations certify trainers, and few of these require much formal training. Trainers with college degrees in exercise physiology or physical education are usually the most knowledgeable.
- Find out if the club has a trained exercise physiologist on staff, such as someone with a degree in exercise physiology, kinesiology, or exercise science. If the facility offers nutritional counseling, it should employ someone who is a registered dietitian (RD) or has similar formal training.
- Ask how much experience the instructors have. Clubs may employ people because they are good athletes or look fit; by themselves, these are not good reasons to hire someone. Ideally, trainers should have both academic preparation and practical experience.

Cost

- Buy only what you need and can afford. If you want to use only workout equipment, you may not need a club that has racquetball courts and saunas.
- Check the contract. Choose the one that covers the shortest period of time possible, especially if it’s your first fitness club experience. Don’t feel pressured to sign a long-term contract.
- Make sure the contract permits you to extend your membership if you have a prolonged illness or go on vacation.
- Try out the club. Ask for a free trial workout, or a 1-day pass, or an inexpensive 1- or 2-week trial membership.
- Find out whether there is an extra charge for the particular services you want. Get any special offers in writing.

Effectiveness

- Tour the facility. Does it offer what the brochure says it does? Does it offer the activities and equipment you want?
- Check the equipment. A good club will have treadmills, bikes, stair-climbers, resistance machines, and weights. Make sure these machines are up-to-date and well maintained.
- Find out if new members get a formal orientation and instruction on how to safely use the equipment. Will a staff member help you develop a program that is appropriate for your current fitness level and goals?
- Make sure the facility is certified. Look for the displayed names American College of Sports Medicine (ACSM), American Council on Exercise (ACE), Aerobics and Fitness Association of America (AFAA), or International Health, Racquet, and Sportsclub Association (IHRSA).
- Don’t get cheated. Check with your Better Business Bureau or Consumer Affairs office to see if others have complained about the facility.
ORGANIZATIONS, HOTLINES, AND WEB SITES
American Council on Exercise (ACE). Promotes exercise and fitness; the Web site features fact sheets on many consumer topics, including choosing shoes, cross-training, and steroids. http://www.acefitness.org
CDC Physical Activity Information. Provides information on the benefits of physical activity and suggestions for incorporating moderate physical activity into daily life. http://www.cdc.gov/physicalactivity/
Disabled Sports USA. Provides sports and recreation services to people with physical or mobility disorders. http://www.dsusa.org
International Health, Racquet, and Sportsclub Association (IHRSA): Health Clubs. Provides guidelines for choosing a health or fitness facility and links to clubs that belong to IHRSA. http://www.healthclubs.com
President’s Council on Physical Fitness and Sports (PCPFS). Provides information on PCPFS programs and publications, including fitness guides and fact sheets. http://www.fitness.gov
http://www.presidentschallenge.org
Shape Up America! A nonprofit organization that provides information and resources about fitness and exercise from government agencies and professional associations. http://www.shapeup.org
SmallStep Gov. Provides resources for increasing activity and improving diet through small changes in daily habits. http://www.smallstep.gov
The following provide links to sites with information on a wide variety of activities and fitness issues; evaluate commercial sites carefully.
Fitness Jumpstart: http://www.primusweb.com/fitnesspartner
NetSweat: The Internet’s Fitness Resource: http://www.netsweat.com
Yahoo!Fitness: http://dir.yahoo.com/Health/Fitness

SELECTED BIBLIOGRAPHY


LAB 2.1 Safety of Exercise Participation

PAR-Q & YOU

(A Questionnaire for People Aged 15 to 69)

Regular physical activity is fun and healthy, and increasingly more people are starting to become more active every day. Being more active is very safe for most people. However, some people should check with their doctor before they start becoming much more physically active.

If you are planning to become much more physically active than you are now, start by answering the seven questions in the box below. If you are between the ages of 15 and 69, the PAR-Q will tell you if you should check with your doctor before you start. If you are over 69 years of age, and you are not used to being very active, check with your doctor.

Common sense is your best guide when you answer these questions. Please read the questions carefully and answer each one honestly: check YES or NO.

1. Has your doctor ever said that you have a heart condition and that you should only do physical activity recommended by a doctor?

2. Do you feel pain in your chest when you do physical activity?

3. In the past month, have you had chest pain when you were not doing physical activity?

4. Do you lose your balance because of dizziness or do you ever lose consciousness?

5. Do you have a bone or joint problem (for example, back, knee or hip) that could be made worse by a change in your physical activity?

6. Is your doctor currently prescribing drugs (for example, water pills) for your blood pressure or heart condition?

7. Do you know of any other reason why you should not do physical activity?

If you answered YES to one or more questions

Talk with your doctor by phone or in person BEFORE you start becoming more physically active or BEFORE you have a fitness appraisal.

Tell your doctor about the PAR-Q and which questions you answered YES.

• You may be able to do any activity you want — as long as you start slowly and build up gradually. Or, you may need to restrict your activities to those which are safe for you. Talk with your doctor about the kinds of activities you wish to participate in and follow his/her advice.

• Find out which community programs are safe and helpful for you.

If you answered NO to all questions

DELAY BECOMING MUCH MORE ACTIVE:

• If you are not feeling well because of a temporary illness such as a cold or a fever — wait until you feel better; or

• If you are or may be pregnant — talk to your doctor before you start becoming more active.

PLEASE NOTE: If your health changes so that you then answer YES to any of the above questions, tell your fitness or health professional. Ask whether you should change your physical activity plan.

Informed Use of the PAR-Q. The Canadian Society for Exercise Physiology, Health Canada, and their agents assume no liability for persons who undertake physical activity, and if in doubt after completing this questionnaire, consult your doctor prior to physical activity.

No changes permitted. You are encouraged to photocopy the PAR-Q but only if you use the entire form.

NOTE: If the PAR-Q is being given to a person before he or she participates in a physical activity program or a fitness appraisal, this section may be used for legal or administrative purposes.

"I have read, understood and completed this questionnaire. Any questions I had were answered to my full satisfaction."

NAME ________________________________

SIGNATURE ____________________________

DATE ________________________________

WITNESS ______________________________

SIGNATURE OF PARENT or GUARDIAN (for participants under the age of majority)

Note: This physical activity clearance is valid for a maximum of 12 months from the date it is completed and becomes invalid if your condition changes so that you would answer YES to any of the seven questions.

© Canadian Society for Exercise Physiology

Physical Activity Readiness Questionnaire (PAR-Q) © 2002. Reprinted with permission from the Canadian Society for Exercise Physiology.

http://www.csep.ca/forms.asp
General Health Profile

To help further assess the safety of exercise for you, complete as much of this health profile as possible.

**General Information**

Age: ________ Total cholesterol: ________ Blood pressure: ________ / ________
Height: ________ HDL: ________ Triglycerides: ________
Weight: ________ LDL: ________ Blood glucose level: ________

Are you currently trying to________ gain or________ lose weight? (check one if appropriate)

**Medical Conditions/Treatments**

Check any of the following that apply to you, and add any other conditions that might affect your ability to exercise safely.

- heart disease
- depression, anxiety, or other psychological disorder
- lung disease
- eating disorder
- diabetes
- eating disorder
- other injury to joint problem: ________
- substance abuse problem
- allergies
- back pain
- other: ________
- asthma
- arthritis
- other: ________
- Do you have a family history of cardiovascular disease (CVD) (a parent, sibling, or child who had a heart attack or stroke before age 55 for men or 65 for women)?

List any medications or supplements you are taking or any medical treatments you are undergoing. Include the name of the substance or treatment and its purpose. Include both prescription and over-the-counter drugs and supplements.

**Lifestyle Information**

Check any of the following that is true for you, and fill in the requested information.

- I usually eat high-fat foods (fatty meats, cheese, fried foods, butter, full-fat dairy products) every day.
- I consume fewer than 5 servings of fruits and vegetables on most days.
- I smoke cigarettes or use other tobacco products. If true, describe your use of tobacco (type and frequency):
- I regularly drink alcohol. If true, describe your typical weekly consumption pattern:
- I often feel as if I need more sleep. (I need about ______ hours per day; I get about ______ hours per day.)
- I feel as though stress has adversely affected my level of wellness during the past year.

Describe your current activity pattern. What types of moderate physical activity do you engage in on a daily basis? Are you involved in a formal exercise program, or do you regularly participate in sports or recreational activities?

**Using Your Results**

*How did you score?* Did the PAR-Q indicate that exercise is likely to be safe for you? Is there anything in your health profile that you think may affect your ability to exercise safely? Have you had any problems with exercise in the past?

*What should you do next?* If the assessments in this lab indicate that you should see your physician before beginning an exercise program, or if you have any questions about the safety of exercise for you, make an appointment to talk with your health care provider to address your concerns.
### Barriers to Being Active Quiz

**Directions:** Listed below are reasons that people give to describe why they do not get as much physical activity as they think they should. Please read each statement and indicate how likely you are to say each of the following statements.

<table>
<thead>
<tr>
<th>How likely are you to say this?</th>
<th>Very likely</th>
<th>Somewhat likely</th>
<th>Somewhat unlikely</th>
<th>Very unlikely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. My day is so busy now, I just don’t think I can make the time to include physical activity in my regular schedule.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2. None of my family members or friends like to do anything active, so I don’t have a chance to exercise.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>3. I’m just too tired after work to get any exercise.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>4. I’ve been thinking about getting more exercise, but I just can’t seem to get started.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>5. I’m getting older so exercise can be risky.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>6. I don’t get enough exercise because I have never learned the skills for any sport.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>7. I don’t have access to jogging trails, swimming pools, bike paths, etc.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>8. Physical activity takes too much time away from other commitments—like work, family, etc.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>9. I’m embarrassed about how I will look when I exercise with others.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>10. I don’t get enough sleep as it is. I just couldn’t get up early or stay up late to get some exercise.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>11. It’s easier for me to find excuses not to exercise than to go out and do something.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>12. I know of too many people who have hurt themselves by overdoing it with exercise.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>13. I really can’t see learning a new sport at my age.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>14. It’s just too expensive. You have to take a class or join a club or buy the right equipment.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>15. My free times during the day are too short to include exercise.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>16. My usual social activities with family or friends do not include physical activity.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>17. I’m too tired during the week and I need the weekend to catch up on my rest.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>
### Scoring

- Enter the circled numbers in the spaces provided, putting the number for statement 1 on line 1, statement 2 on line 2, and so on.
- Add the three scores on each line. Your barriers to physical activity fall into one or more of seven categories: lack of time, social influence, lack of energy, lack of willpower, fear of injury, lack of skill, and lack of resources. A score of 5 or above in any category shows that this is an important barrier for you to overcome.

<table>
<thead>
<tr>
<th></th>
<th>Very likely</th>
<th>Somewhat likely</th>
<th>Somewhat unlikely</th>
<th>Very unlikely</th>
</tr>
</thead>
<tbody>
<tr>
<td>18. I want to get more exercise, but I just can’t seem to make myself stick to anything.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>19. I’m afraid I might injure myself or have a heart attack.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>20. I’m not good enough at any physical activity to make it fun.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>21. If we had exercise facilities and showers at work, then I would be more likely to exercise.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

### Using Your Results

*How did you score?* How many key barriers did you identify? Are they what you expected?

*What should you do next?* For your key barriers, try the strategies listed on the following pages and/or develop additional strategies that work for you. Check off any strategy that you try.
Suggestions for Overcoming Physical Activity Barriers

Lack of time

______ Identify available time slots. Monitor your daily activities for 1 week. Identify at least three 30-minute time slots you could use for physical activity.
______ Add physical activity to your daily routine. For example, walk or ride your bike to work or shopping, organize social activities around physical activity, walk the dog, exercise while you watch TV, park farther from your destination, etc.
______ Make time for physical activity. For example, walk, jog, or swim during your lunch hour, or take fitness breaks instead of coffee breaks.
______ Select activities requiring minimal time, such as walking, jogging, or stair climbing.
______ Other: ____________________________________________________________________________________________________

Social influence

______ Explain your interest in physical activity to friends and family. Ask them to support your efforts.
______ Invite friends and family members to exercise with you. Plan social activities involving exercise.
______ Develop new friendships with physically active people. Join a group, such as the YMCA or a hiking club.
______ Other: ____________________________________________________________________________________________________

Lack of energy

______ Schedule physical activity for times in the day or week when you feel energetic.
______ Convince yourself that if you give it a chance, exercise will increase your energy level; then, try it.
______ Other: ____________________________________________________________________________________________________

Lack of willpower

______ Plan ahead. Make physical activity a regular part of your daily or weekly schedule and write it on your calendar.
______ Invite a friend to exercise with you on a regular basis and write it on both your calendars.
______ Join an exercise group or class.
______ Other: ____________________________________________________________________________________________________

Fear of injury

______ Learn how to warm up and cool down to prevent injury.
______ Learn how to exercise appropriately considering your age, fitness level, skill level, and health status.
______ Choose activities involving minimal risk.
______ Other: ____________________________________________________________________________________________________

Lack of skill

______ Select activities requiring no new skills, such as walking, jogging, or stair climbing.
______ Exercise with friends who are at the same skill level as you are.
______ Find a friend who is willing to teach you some new skills.
______ Take a class to develop new skills.
______ Other: ____________________________________________________________________________________________________

Lack of resources

______ Select activities that require minimal facilities or equipment, such as walking, jogging, jumping rope, or calisthenics.
______ Identify inexpensive, convenient resources available in your community (community education programs, park and recreation programs, worksite programs, etc.).
______ Other: ____________________________________________________________________________________________________
Are any of the following additional barriers important for you? If so, try some of the strategies listed here or invent your own.

**Weather conditions**

- Develop a set of regular activities that are always available regardless of weather (indoor cycling, aerobic dance, indoor swimming, calisthenics, stair climbing, rope skipping, mall walking, dancing, gymnasium games, etc.).
- Look on outdoor activities that depend on weather conditions (cross-country skiing, outdoor swimming, outdoor tennis, etc.) as “bonuses”—extra activities possible when weather and circumstances permit.
- Other: ____________________________________________________________________________________

**Travel**

- Put a jump rope in your suitcase and jump rope.
- Walk the halls and climb the stairs in hotels.
- Stay in places with swimming pools or exercise facilities.
- Join the YMCA or YWCA (ask about reciprocal membership agreements).
- Visit the local shopping mall and walk for half an hour or more.
- Bring a personal music player loaded with your favorite workout music.
- Other: ____________________________________________________________________________________

**Family obligations**

- Trade babysitting time with a friend, neighbor, or family member who also has small children.
- Exercise with the kids—go for a walk together, play tag or other running games, or get an aerobic dance or exercise DVD for kids (there are several on the market) and exercise together. You can spend time together and still get your exercise.
- Hire a babysitter and look at the cost as a worthwhile investment in your physical and mental health.
- Jump rope, do calisthenics, ride a stationary bicycle, or use other home gymnasium equipment while the kids watch TV or when they are sleeping.
- Try to exercise when the kids are not around (e.g., during school hours or their nap time).
- Other: ____________________________________________________________________________________

**Retirement years**

- Look on your retirement as an opportunity to become more active instead of less. Spend more time gardening, walking the dog, and playing with your grandchildren. Children with short legs and grandparents with slower gaits are often great walking partners.
- Learn a new skill you’ve always been interested in, such as ballroom dancing, square dancing, or swimming.
- Now that you have the time, make regular physical activity a part of every day. Go for a walk every morning or every evening before dinner. Treat yourself to an exercycle and ride every day during a favorite TV show.
- Other: ____________________________________________________________________________________

Determine Your Baseline

Wear the pedometer for a week to obtain a baseline average daily number of steps.

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>T</th>
<th>W</th>
<th>Th</th>
<th>F</th>
<th>Sa</th>
<th>Su</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steps</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Set Goals

Set an appropriate goal for increasing steps. The goal of 10,000 steps per day is widely recommended, but your personal goal should reflect your baseline level of steps. For example, if your current daily steps are far below 10,000, a goal of walking 2000 additional steps each day might be appropriate. If you are already close to 10,000 steps per day, choose a higher goal. Also consider the following guidelines from health experts:

• To reduce the risk of chronic disease, aim to accumulate at least 150 minutes of moderate physical activity per week.
• To help manage body weight and prevent gradual, unhealthy weight gain, engage in 60 minutes of moderate to vigorous-intensity activity on most days of the week.
• To sustain weight loss, engage daily in at least 60–90 minutes of moderate-intensity physical activity.

To help gauge how close you are to meeting these time-based physical activity goals, you might walk for 10–15 minutes while wearing your pedometer to determine how many steps correspond with the time-based goals.

Once you have set your overall goal, break it down into several steps. For example, if your goal is to increase daily steps by 2000, set mini-goals of increasing daily steps by 500, allowing 2 weeks to reach each mini-goal. Smaller goals are easier to achieve and can help keep you motivated and on track. Having several interim goals also gives you the opportunity to reward yourself more frequently. Note your goals below:

Mini-goal 1: ___________________________ Target date: ___________________________ Reward: ___________________________
Mini-goal 2: ___________________________ Target date: ___________________________ Reward: ___________________________
Mini-goal 3: ___________________________ Target date: ___________________________ Reward: ___________________________
Overall goal: ___________________________ Target date: ___________________________ Reward: ___________________________

Develop Strategies for Increasing Steps

What can you do to become more active? The possibilities include walking when you do errands, getting off one stop from your destination on public transportation, parking an extra block or two away from your destination, and doing at least one chore every day that requires physical activity. If weather or neighborhood safety is an issue, look for alternative locations to walk. For example, find an indoor gym or shopping mall or even a long hallway. Check out locations that are near or on the way to your campus, workplace, or residence. If you think walking indoors will be dull, walk with friends or family members or wear headphones (if safe) and listen to music or audiobooks.

Are there any days of the week for which your baseline steps are particularly low and/or it will be especially difficult because of your schedule to increase your number of steps? Be sure to develop specific strategies for difficult situations.

Below, list at least five strategies for increasing daily steps:

_________________________________________________
_________________________________________________
_________________________________________________
_________________________________________________
_________________________________________________
**Track Your Progress**
Based on the goals you set, fill in your goal portion of the progress chart with your target average daily steps for each week. Then wear your pedometer every day and note your total daily steps. Track your progress toward each mini-goal and your final goal. Every few weeks, stop and evaluate your progress. If needed, adjust your plan and develop additional strategies for increasing steps. In addition to the chart in this worksheet, you might also want to graph your daily steps to provide a visual reminder of how you are progressing toward your goals. Make as many copies of this chart as you need.

<table>
<thead>
<tr>
<th>Week</th>
<th>Goal</th>
<th>M</th>
<th>Tu</th>
<th>W</th>
<th>Th</th>
<th>F</th>
<th>Sa</th>
<th>Su</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Progress Checkup**
How close are you to meeting your goal? How do you feel about your program and your progress?
If needed, describe changes to your plan and additional strategies for increasing steps:

<table>
<thead>
<tr>
<th>Week</th>
<th>Goal</th>
<th>M</th>
<th>Tu</th>
<th>W</th>
<th>Th</th>
<th>F</th>
<th>Sa</th>
<th>Su</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Progress Checkup**
How close are you to meeting your goal? How do you feel about your program and your progress?
If needed, describe changes to your plan and additional strategies for increasing steps:

<table>
<thead>
<tr>
<th>Week</th>
<th>Goal</th>
<th>M</th>
<th>Tu</th>
<th>W</th>
<th>Th</th>
<th>F</th>
<th>Sa</th>
<th>Su</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Progress Checkup**
How close are you to meeting your goal? How do you feel about your program and your progress?
If needed, describe changes to your plan and additional strategies for increasing steps in the space below.