

The Components of Physical Fitness Lesson 6.2



Obviously, people engage in very different activities in their routines. This means that people have different fitness requirements. For example, a varsity college athlete will face different fitness challenges than a casual jogger. A soldier, firefighter, or police officer will confront different fitness challenges than a teacher, bookkeeper, or lawyer (Figure 6.6).

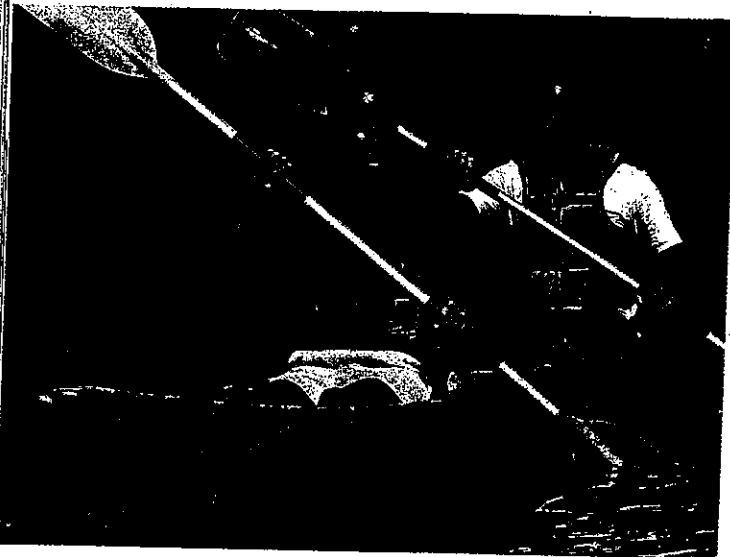


Figure 6.6

Do you participate in any recreational physical activities such as canoeing? If you don't have access to a canoe or body of water, what types of activities could you do in your area and get the same kind of workout?

components of fitness
different types of fitness, such as strength and flexibility

health-related fitness
type of fitness used to easily perform daily activities

aerobic
activity involving the use of oxygen to fuel processes in the body

anaerobic
activity occurring in the absence of oxygen

cardiorespiratory fitness
term that describes how efficiently the cardiovascular and respiratory systems deliver oxygen to the muscles during prolonged physical activity



Health-Related Fitness

Health-related fitness is the type of fitness you need to perform daily activities with ease and energy. Fitness experts talk about the different aspects of health-related fitness in different ways. This lesson will discuss cardiorespiratory fitness, endurance, muscular strength, and flexibility. Another component of health-related fitness is body composition, which you read about in chapter 4.

When people think about exercise and fitness, they often think of aerobic exercise, which is a cardiorespiratory type of fitness. **Aerobic** means *in the presence of oxygen*. During aerobic exercise, oxygen is delivered to the muscles, which gives them the energy they need to continue exercising.

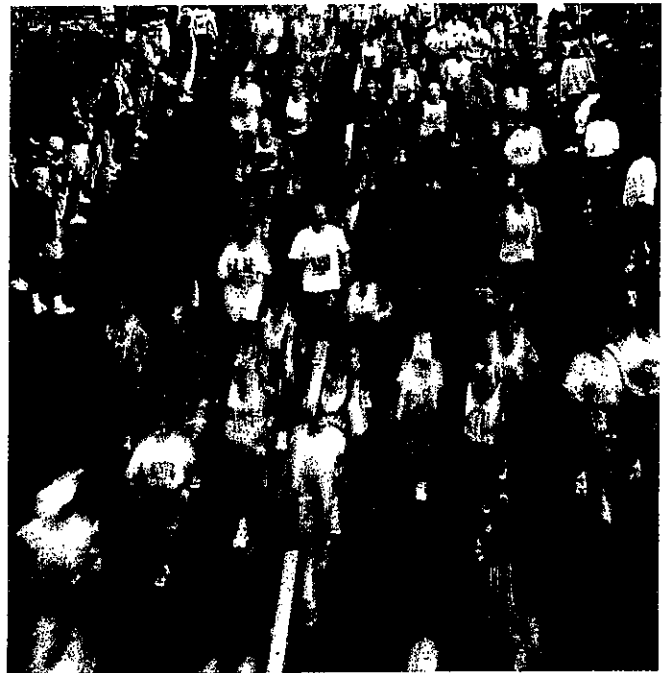
Not all types of exercise, however, require oxygen to provide energy. In **anaerobic** exercise, such as weight lifting, glycogen provides the energy your body needs. Anaerobic activity occurs in short bursts, while aerobic activities occur over a longer stretch of time. Consider the difference between a sprinter (anaerobic) and a marathon runner (aerobic) to remember the difference between these two terms, which you will encounter often as you learn more about fitness (Figure 6.7).

1. Cardiorespiratory Fitness

Cardiorespiratory fitness refers to how well the heart and lungs work together to deliver oxygen and nutrients to the muscles and cells. This type of fitness is aerobic because the body relies on oxygen to provide the energy needed to continue exercising. Many different types of activities (running, gardening, dancing, shoveling snow) provide cardiovascular fitness.



A



B

People who engage in regular cardiorespiratory exercise maintain the health of their heart and lungs in several ways. They strengthen the heart, improve blood flow throughout the body, and improve the body's ability to quickly transport oxygen and nutrients to all of its muscles and cells. This increased strength and ability leads to greater endurance. The stronger your heart and lungs become, the longer they can endure increased levels of physical activity.

Increasing cardiorespiratory fitness requires that you engage in physical activity for a certain amount of time, or *duration*, each week and at a certain level of intensity. The frequency at which you engage in the activities and the types of activities you engage in also impact your fitness. Some people use the acronym *FITT* (frequency, intensity, time, and type) to help them focus on these key factors. Manipulating these factors will allow you to gradually and safely improve your fitness.

Time, Types, and Frequency. People who want to achieve cardiorespiratory fitness need to engage in various types of physical activity for at least 150 minutes, or 2 ½ hours, each week. Many people prefer to divide this time into smaller, more frequent sessions, such as 30 minutes of physical activity five days a week, or 50 minutes three days a week.

You can also engage in physical activity several times a day for relatively brief periods of time. For example, you achieve the same cardiovascular benefits whether you go for a 30-minute walk, or three 10-minute walks. The time and frequency of your workouts are related to intensity.

Intensity. People must perform physical activity at a certain level of intensity to achieve cardiovascular fitness. *Intensity* is measured by the amount of energy your body uses per minute while engaging in an activity (Figure 6.8 on the next page). You can judge the intensity of a given physical activity based on how it affects your heart rate and breathing.

Figure 6.7

A) Sprinting, which occurs in short bursts, is an example of an anaerobic activity. B) Running a marathon is an example of an aerobic activity span.

Why is running a marathon considered an aerobic activity? Give another example of an anaerobic and an aerobic activity.

intensity
a quality that is measured by how much energy the body uses per minute during physical activity

Figure 6.8 Approximate Calories Burned for Different Physical Activities

Moderate Physical Activity	Calories Burned in 30 Minutes of Activity				
	100-lb. person	120-lb. person	135-lb. person	150-lb. person	200-lb. person
hiking	136	164	187	205	273
climbing stairs	147	176	199	217	285
gardening	102	123	138	153	205
softball	102	123	138	153	205
calisthenics	102	123	138	153	205
mopping	102	123	138	153	205
scrubbing floors	102	123	138	153	205
bicycling (< 10 mph)	91	109	123	136	182
brisk walking (> 3 mph)	91	109	123	136	182
weight lifting (light workout)	68	82	92	102	136

Vigorous Physical Activity	Calories Burned in 30 Minutes of Activity				
	100-lb. person	120-lb. person	135-lb. person	150-lb. person	200-lb. person
rock climbing (ascending)	250	300	338	375	500
running (10 min/mile)	227	273	300	341	455
bicycling (> 10 mph)	227	273	300	341	455
football	182	218	245	273	364
tennis (singles)	182	218	245	273	364
calisthenics (push-ups, sit-ups)	182	218	245	273	364
jumping rope	182	218	245	273	364
soccer	159	191	215	239	318
rollerblading	159	191	215	239	318
swimming	136	164	184	205	273
basketball (half court)	136	164	184	205	273
shoveling snow	136	164	184	205	273
dancing (vigorous)	125	150	169	187	250

During an activity of moderate intensity, your heart rate and breathing are faster than normal, but you can still carry on a conversation. During an activity of vigorous intensity, your heart rate and breathing are considerably faster than normal, and you are unable to carry on a conversation.

Target Heart Rate. How intense should your workout be? Your goal is to increase your heart rate, but not by too much. For moderate-intensity activity, a person's *target heart rate* should be 50–70% of her maximum heart rate. For vigorous-intensity activity, a person's target heart rate should be 70–85% of her maximum heart rate.

What is the maximum heart rate? A single, standard maximum does not exist. A person's maximum heart rate depends on his or her age. You can calculate your maximum heart rate by subtracting your age from 220. For example, if you are 16 years of age, your maximum heart rate is 204 beats per minute (or *bpm*).

$$220 - \text{age in years} = \text{Maximum heart rate in beats per minute (bpm)}$$

$$220 - 16 = 204 \text{ bpm}$$

target heart rate
the heart rate to aim for while performing aerobic exercise that leads to optimal cardiorespiratory fitness; varies by age

Once you have determined your maximum heart rate, you can calculate your target heart rate for different levels of physical activity. Suppose that you are a 16-year-old with a maximum heart rate of 204 bpm. Using that information, you would perform the following calculations to find your target heart rates for moderate-intensity physical activity (50–70%) and vigorous-intensity physical activity (70–85%):

$$204 \times 50\% = 102 \text{ bpm}$$

$$204 \times 70\% = 142.8 \text{ bpm}$$

$$204 \times 85\% = 173.4 \text{ bpm}$$

As you can see from these calculations, a 16-year-old should try to engage in physical activities that cause a heart rate between 102 and 173 bpm. If the goal is moderate-intensity physical activity, this person should maintain a heart rate between 102 and 143 bpm. If the goal is vigorous-intensity physical activity, this person's heart rate should be between 143 and 173 bpm (Figure 6.9).

Taking Your Pulse. An easy way to monitor the intensity of physical activity is to check your *pulse* (your heart rate) to see if it is within the target range during the activity. You can check your pulse at the neck, wrist, or chest, although the wrist is often the easiest place to find a pulse. Taking your pulse at the wrist is very easy if you follow these steps:

- Find your pulse on the artery of the wrist in line with your thumb.
- Place the tips of your index and middle fingers over the artery and press lightly (Figure 6.10).
- Start counting on a beat, which is zero (not one).
- Count the number of heartbeats for a full 60 seconds. You can also count for six seconds and multiply by 10.

Heart Rate Monitors. Heart rate monitors can also measure your pulse. Traditionally, such monitors had to be worn snugly around the chest so that they could measure how fast the heart was beating. Newer heart rate monitors are worn around the wrist. These monitors measure your pulse by shining a light into the blood vessels in your wrist and measuring changes in blood volume each time your heart beats and blood is pushed through your body. Less light reflected back into the sensor on your wrist means more blood volume and a faster pulse.

RPE Tests. Another way to monitor the intensity of physical activity during a workout is to rate how hard you feel your body is working. The Berg Rating of Perceived Exertion (RPE) test is based on the physical sensations—heart rate, sweating, breathing, and muscle tiredness—that a person experiences during physical activity. This is a subjective measuring method, which means it is only based on feeling; there are no facts to back up that feeling. Nevertheless, research has shown that these types of assessment are fairly good measures of actual intensity.



Figure 6.9

It is a good idea to get into the habit of monitoring your heart rate as you work out. *Who might be monitoring her heart rate in this photo? Explain.*

Figure 6.10

When taking your pulse at your wrist, place the tips of your index and middle fingers on the artery that lines up with your thumb.





Local and Global Health

Rates of Physical Activity around the World

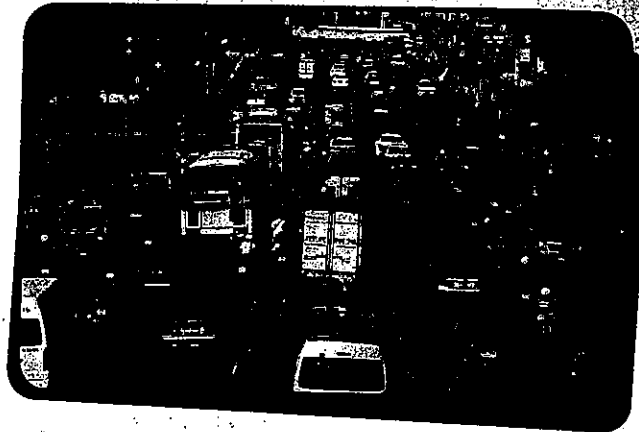
Although about 25% of American adults report not engaging in any type of physical activity in the past month, there are substantial differences in the level of physical activity among people who live in different states. In Oregon, Minnesota, Colorado, and Vermont, less than 19% of adults report not engaging in any physical activity in the last month. In contrast, more than 30% of adults in Kentucky, Mississippi, Oklahoma, and West Virginia report not engaging in any physical activity in the last month.

Big differences in levels of physical activity also exist among people who live in different countries. In some parts of the world, almost 50% of women and 40% of men don't participate in enough physical activity. These areas include

- North America (the United States, Canada, and Mexico);
- South America (Argentina, Peru, Chile, Ecuador, and Bolivia); and
- the Eastern Mediterranean (Afghanistan, Egypt, Iraq, Pakistan, Saudi Arabia, Somalia, and Sudan).

Many factors contribute to this overall lack of physical activity. These factors include

- a lack of recreational physical activity;
- an increase in sedentary behavior, such as watching television and using the computer;
- an increase in driving and public transportation use, and a decrease in biking and walking; and



- environmental factors such as violence, air pollution, and lack of access to safe parks and recreation facilities.

Thinking Critically

1. What do you think causes these differences of physical activity levels among different states and countries? How could you test your idea?
2. How do you think the worldwide rates of physical activity will change over time? What are some factors that might lead rates of physical activity to increase? decrease?
3. What strategies could governments take to increase the rate of physical activity in their countries? Which strategies do you think would be most effective? Explain your answer.

Ratings on the RPE test are made using a scale of 6 to 20. A score of 6 means "no exertion at all" and 20 means "maximal exertion." While you are exercising, you should rate how hard you feel your body is working using this range of numbers. You can then adjust the intensity of your workout by speeding up or slowing down to reach the desired level of workout intensity. Exertion rates between 12 and 14 are considered a moderate level of intensity.

2. Endurance

Another important component of health-related fitness is a person's endurance. There are two types of endurance—aerobic and muscular. Some experts consider aerobic endurance to be equal to the cardiorespiratory fitness that you read about earlier in this lesson. *Aerobic endurance* describes a

person's ability to engage in cardiorespiratory activity over a period of time (Figure 6.11). The level of aerobic endurance a person can achieve depends on the rate at which the heart can continue to pump blood and the rate at which the body can break down carbohydrates and fat to produce the energy the body needs.

Muscular endurance refers to the length of time for which a particular group of muscles can continue to exert force. Muscular endurance is different from muscular strength. Muscular endurance has to do with the duration of performance, whereas strength has to do with the amount of force used to move or lift an object.

Some types of physical activity require high levels of both aerobic and muscular endurance. For example, marathon runners must have great muscular endurance for their leg muscles to continue working over long distances for hours at a time. These runners must also have great aerobic endurance for their heart to continue pumping at higher than normal intensity levels for such an extended period of time. Marathon runners often consume snacks that are high in carbohydrates, such as bananas, dried fruits, and energy drinks, while running to provide the body with the energy it needs to maintain a high level of endurance for two, three, or four hours of running.

Muscular Strength

Muscular strength is the ability of a muscle to exert force against resistance. Imagine that you are arm wrestling a friend. Assume that you have stronger arm muscles than your friend. As you push against your friend's weaker arm muscles, your force will overcome his resistance, and you will win the match.

Muscle strength can be measured in many ways. For example, you can measure how much weight (resistance) you can lift, how much weight you can push, and how much weight you can pull.

Types of Strength Training. The goal of strength training is to increase the strength of your muscle and bone. The resistance needed for strength training can be provided by a variety of sources. The following are examples of ways to provide resistance during strength training:

- Your body weight serves as resistance when performing push-ups, sit-ups, or leg squats.
- Resistance bands or tubes are lightweight and provide constant tension to build muscle strength. The thicker the band, the more resistance it provides.
- Free weights, such as barbells and dumbbells, can be used to provide maximum resistance.
- Weight machines guide your motion to ensure the target muscle is being exercised.

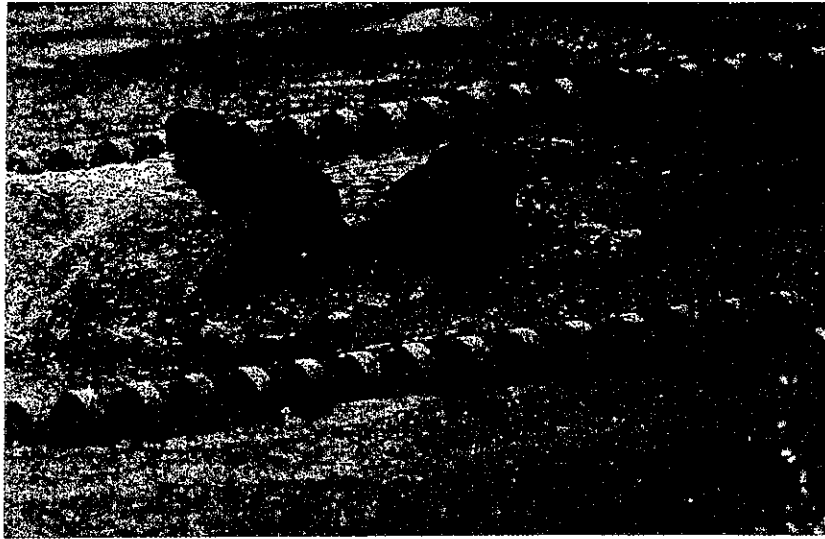


Figure 6.11

Swimming moderate to long distances is an excellent activity for building your cardiorespiratory endurance. *How long can you swim without resting?*



Figure 6.12

Always work with a spotter when lifting free weights that challenge your lifting capabilities.

Guidelines for Strength Training. Strength training should be performed for 20 to 30 minutes, two or three times a week, to build muscle mass and bone density.

You should target all the major muscle groups during your training. These include the chest (or *pectorals*), back, arms and shoulders, abdominals, and legs and buttocks. Different types of exercises are designed to target different muscle groups.

Do not perform any type of strength training unless you know the proper form for each exercise. Proper form includes finding a consistent tempo and paying attention to your breathing. Using improper form can lead to injuries and less-than-desirable increases in strength and endurance. The following are some guidelines for strength training:

- Start with a 5- to 10-minute warm-up, which includes a low- or moderate-intensity cardiorespiratory activity to get blood flowing to your muscles. You will learn more about proper warm-ups and cooldowns in the next lesson.
- Select a weight (resistance) level that tires your muscles after 12 to 15 repetitions. This weight will be different for different exercises.
- Do two or three *sets* (groups of repetitions followed by rest) of an exercise. For example, you could choose to do three sets of squats, with each set consisting of 10 repetitions.
- As you become stronger, you won't feel tired doing the same number of repetitions as you did when you first started. When this happens, you will probably want to increase the weight you are using. You may choose to do fewer sets with increased weight to build strength, or you could build muscular endurance by doing more sets.
- Work out with a partner if you lift heavy weights. This person, called a *spotter*, can help you avoid dropping the weight on yourself if it becomes too difficult for you to manage (Figure 6.12).
- Rest the muscles in a particular group for at least one full day after strength training to give the muscles time to recover. Strength training works in part by causing tiny tears in the muscle tissue, which then allows the muscles to grow stronger as the tears are repaired.
- Stop immediately if you feel sharp pain or experience swollen joints, which is a sign that you've done too much. Some muscle soreness is a normal part of strength training, but intense pain indicates a problem.

flexibility

the ability to bend without injury or breakage

range of motion

a measure of flexibility that tells how far a joint or body part can be moved

4. Flexibility

You probably know what it means to be flexible. People who are flexible are able to fully and easily move their muscles and joints. Your *flexibility* is determined by the elasticity of your muscles and connective tissues, such as your ligaments and tendons. One measure of flexibility is *range of motion*, which tells how far a joint can move in a particular direction.

Some people are very flexible, meaning that they are easily able to move their muscles and joints into difficult positions. Ballet dancers and gymnasts, for example, have great flexibility and are able to perform moves such as backbends and the splits. Other people are not so flexible, and might have a hard time bending over to tie their shoes (Figure 6.13).

Increasing Flexibility. To increase your flexibility, you simply need to regularly (and safely) stretch your muscles. Fitness guidelines suggest that everyone should engage in some type of stretching activity at least two or three days each week. Guidelines for increasing your flexibility include the following:

- Before stretching, engage in 5 to 10 minutes of low- or moderate-intensity cardiorespiratory activity, such as jumping jacks, skipping rope, or light jogging, to increase the heart rate and blood flow to the muscles.
- After your muscles are warmed up, stretch your muscle so that you can feel tightness, but not pain.
- Hold this stretch for 10 to 30 seconds, but do not bounce (this can lead to overstretching or even small tears in the muscle).
- While holding the stretch, you should breathe naturally to provide oxygen to your muscles.
- Repeat each stretch 2 to 4 times. Repetition will help you really work the muscle and increase flexibility (Figure 6.14).

Advantages and Disadvantages of Flexibility. Some people benefit from having flexibility in certain parts of their bodies. For example, baseball pitchers need great flexibility in their shoulders, and ballet dancers need flexibility in their hamstrings and inner thighs. Everyone benefits from having some flexibility because it helps improve performance in many types of physical activity and lowers the risk of experiencing an injury.

People who are not very flexible, meaning they have a limited range of motion, often have tight or stiff muscles. They may have difficulty performing normal daily life activities, such as tying their shoes.

More flexibility is usually a good thing, but you can be too flexible. In fact, people who are extremely flexible have an increased risk of injuring their joints.

Skill-Related Fitness

Skill-related fitness refers to the kind of fitness a person needs to perform successfully in a particular sport or leisure activity. The different aspects of skill-related fitness include speed, agility, balance, power, coordination, and reaction time.

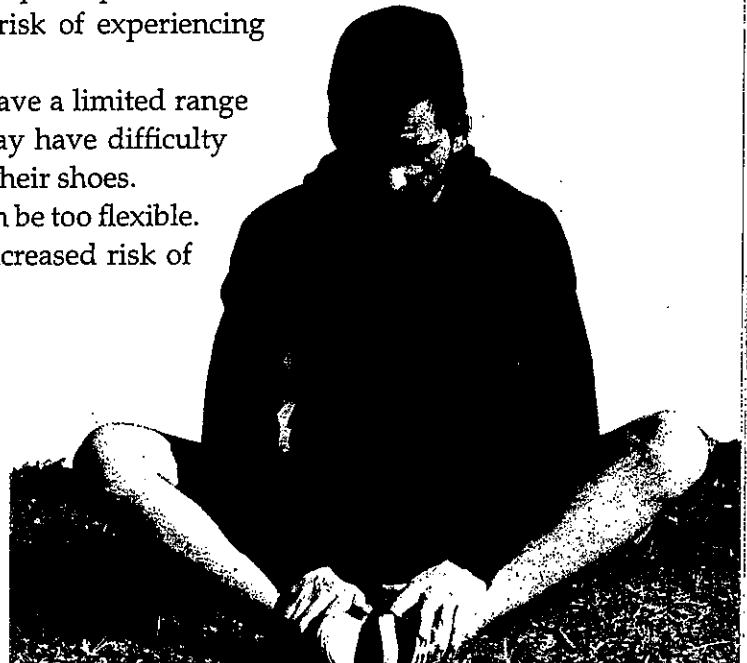


Figure 6.13

How would you rate your flexibility?

Figure 6.14

Stretching improperly can cause injuries. For example, when doing this groin stretch, you should pull your upper body down gently over your legs, bending from the hips. Do not bounce up and down.



skill-related fitness
type of fitness that improves a person's performance in a particular sport

agility
the ability to quickly change the body's momentum and direction

1. Speed

If you have participated in or watched sporting events, you know what speed is. Some people are simply faster than others, which makes speed an important aspect of many different sports. Runners and swimmers must be fast, especially if they are racing short distances. Sprinting requires more speed than long-distance running or swimming.

2. Agility

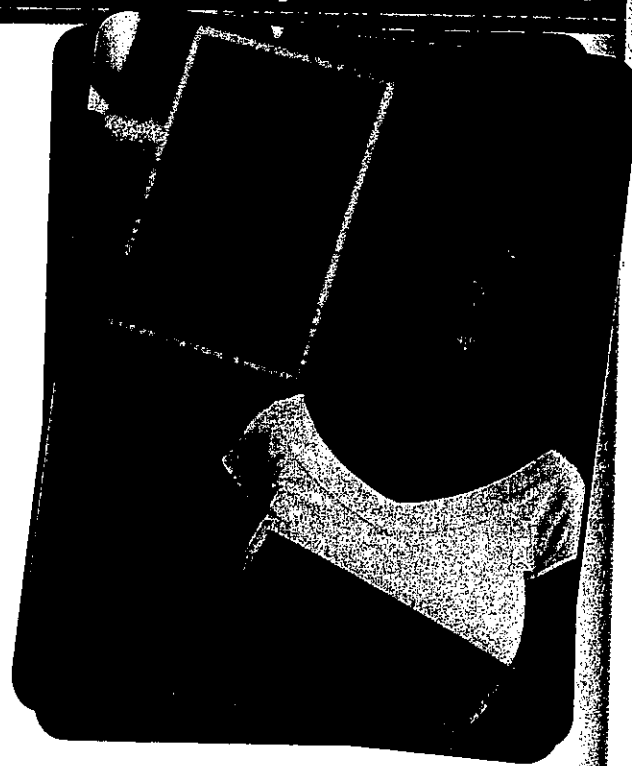
Another type of skill-related fitness is **agility**, which is the ability to rapidly change the body's momentum and direction. This skill involves accelerating in a particular direction from a position of standing still, or rapidly changing from movement in one direction to movement in another direction. Agility also describes a person's ability to navigate obstacles they may encounter and need to go under, over, or around. A running back on a football team, for example, must have agility to maneuver around and away from players on the other team to avoid getting tackled.

CASE STUDY How to Make Time for Physical Activity in a Full Schedule

Elise is a high school senior involved in many activities at her school. She is a good student and hopes to receive a scholarship for college. For this reason, Elise studies several hours each night. She also sings in the high school chorus, which involves rehearsals in the evenings, and has a part-time job waitressing. Elise's doctor told her that she needs to exercise for her health, but she can't find the time in her busy schedule.

Elise soon begins to recognize signs of poor fitness. She sometimes experiences shortness of breath when waitressing during busy times at the restaurant. She also worries that her lack of fitness could negatively affect her singing and other activities she enjoys. Elise read in her health book that improving her physical fitness could help her academic performance. As a result, she decides to work with the school nurse to plan a strategy for engaging in physical activity a few times a week. She is excited about the plan they develop, which includes

- taking a 20-minute walk with friends after school and before she starts studying;
- biking to school and her waitressing job when the weather is nice; and
- buying a set of hand weights she can use to work on strength training while she is watching television on the weekends.



Thinking Critically

1. Evaluate Elise's fitness plan to determine the likelihood that she will succeed at her fitness goal.
2. Do you think Elise's problem is common for teens? What are some other factors you believe contribute to teens' lack of physical activity?

3. Balance

Balance means holding a particular body posture and position on a stable or unstable surface. Balance is obviously an important part of some sports, such as diving and gymnastics, as well as many leisure activities. Can you do a handstand or ride a unicycle? These are examples of fitness skills that require considerable balance. Balance varies from person to person, and most people find that this skill declines as they get older. Many people fail to appreciate their balancing skills until they lose them.

4 Power

Power is a combination of strength and speed. Some athletes are strong but not fast; others are fast but not strong. The athlete who combines strength and speed can be powerful. Power is an important skill in many sports, such as football and baseball. An outstanding volleyball striker is usually one of the more powerful players on the team (Figure 6.15).

Coordination

Do you think of yourself as being coordinated? Can you perform various movements easily and gracefully? Soccer players, hockey players, and other athletes who must have agility also have high levels of coordination. Coordination is also closely related to balance.

Some people are naturally more coordinated than others. Many athletes who perform complex movements do so smoothly, however, as a result of practice. Natural ability and practice lead to better coordination.

Figure 6.15

What skill-related components of fitness are most needed by these athletes if they are to be successful?





6. Reaction Time

Reaction time refers to the quickness of a response. How fast do you react to someone else's movement? If you are faster than most at responding, you might have the qualities to be an outstanding tennis player, a good hitter in baseball, or a soccer goalie (Figure 6.16).

Designing a Personal Fitness Plan

Now that you know the components of fitness, you are better able to create a personal fitness plan. Most people, even those who are already physically fit, can improve some aspects of their fitness. That is why fitness plans are "personal," so that you can work on the parts of your fitness most in need of improvement. The components of fitness that you need to focus on might be very different from those that your best friends need to prioritize.

Figure 6.16

Many athletes need to exhibit good reaction time. What position players in what sports come to mind when you think of reaction time?

overload principle
standard which states that gradual increase of a physical demand on the body will improve fitness

specificity principle
standard which states that exercising a particular component leads to improvements in the fitness of only that component

progression principle
standard which states that FITT factors should be increased over time to improve fitness

Training Principles

When developing your fitness plan, you will want to keep in mind a few basic principles: overload, specificity, and progression. Combined with the four ways of varying your workout—frequency, intensity, time, and type (FITT)—these principles will guide you as you monitor and adjust your fitness plan to maximize its benefits.

The **overload principle** states that you must put a greater demand on your body to improve it. You won't be able to run for a longer distance unless you try to run a longer distance. You won't be able to lift more weight unless you try lifting heavier weights. You need to "overload" your cardio-respiratory system and your muscles to strengthen them.

The **specificity principle** states that certain activities will lead to improvements in certain components of fitness. Stretching exercises for your legs improve the flexibility of your leg muscles, but not your arm muscles. If you lift a weight, the muscles used to lift the weight will be strengthened, but that particular exercise will have no effect on your other muscles. This means that you need to choose activities that focus on the components of fitness that you want to improve.

The **progression principle** says that you must increase your FITT factors over time to improve your fitness. If you want to maintain your current levels of fitness, you can develop a plan and stick to that plan forever. If you want to improve your fitness beyond its current level, however, you will need to increase one or more of the FITT factors periodically to increase flexibility, strength, or endurance.

First Steps

The first step in designing your fitness plan is to determine your current level of fitness within the different components. These baseline measurements will give you a sense of where you are now and help you under-

stand what you want to improve. These measurements will also help you chart your progress as you proceed with your program.

You could begin by measuring the following areas of fitness:

- pulse rate after you walk a mile
- the time it takes you to walk a mile
- how many push-ups you can do at one time
- how far you can reach forward, toward your toes, while sitting with your legs straight in front of you
- your waist circumference
- your weight or BMI

Next, you need to develop a specific fitness plan that will help you achieve your goals. The fitness plan you create will be based on the goals you want to achieve, such as increasing flexibility, building strength, or increasing cardiorespiratory endurance.

It is a good idea to create a balanced fitness plan, even if you are targeting a particular fitness component. This means that your plan should include at least 150 minutes of moderate-intensity aerobic exercise each week (or 75 minutes of vigorous aerobic activity) plus at least two days of strength training.

Staying on Track

Staying on track with your fitness plan can be difficult, but it can be done. It is helpful to select activities you can do, given the available space and equipment (Figure 6.17). Does your school have a gym you can use?



Figure 6.17 Physical Activities You Can Do to Increase Fitness

Moderate-Intensity Activities	Vigorous-Intensity Activities	Muscle-Strengthening Activities	Bone-Strengthening Activities
<ul style="list-style-type: none"> • walking briskly • raking leaves • biking (slower than 10 miles per hour) • skateboarding • mowing the lawn • basketball • volleyball • hiking • rollerblading • canoeing • shoveling snow • doubles tennis 	<ul style="list-style-type: none"> • soccer • jumping rope • martial arts, such as karate • singles tennis • field or ice hockey • aerobics • cheerleading • gymnastics • jogging or running • swimming laps • rollerblading or skating at a brisk pace • cross-country skiing • football • basketball • soccer • aerobic dancing • biking (10 miles per hour or faster) • hiking uphill or with a heavy backpack 	<ul style="list-style-type: none"> • push-ups • sit-ups • rock climbing • using weight machines • lifting handheld weights • using resistance bands 	<ul style="list-style-type: none"> • jumping rope • running • gymnastics • volleyball • tennis • basketball

Do you have a bike? Do you have access to a swimming pool? Remember, many fitness activities—such as jumping rope and doing push-ups—require only a small amount of space, and very minimal equipment.

Find times in your day and in your week that you know you can fit up for exercise. If you are unrealistic in setting your schedule, you will probably fail to stick with your fitness plan. You should also look for ways to use your time efficiently. For example, you might be able to watch your favorite television show while riding a stationary bike or walking on a treadmill in front of the TV. It is important to think about ways you can build exercise into your daily schedule.

cross training
training in different
activities to improve
performance in a sport and
reduce the risk of injury

Cross Training. You may want to engage in *cross training*. This type of training means you participate in one activity to help you improve in another. A tennis player, for example, might include regular upper body weight lifting in a fitness program to strengthen his or her serve. A basketball player might take a dance class to improve his or her agility. Even if you don't purposefully engage in cross training, you should try to include different activities in your weekly plan so that you don't get bored doing the same activity multiple times a week. Choosing different activities also reduces your chance of injuring a single body part. It also lets you work on different types of fitness that rely on different parts of your body (Figure 6.18).

Keeping Records. Documenting your fitness plan can also help you stay on track. This includes writing your plan and then noting specific times and numbers for each exercise in each workout. Be specific when documenting your plan. This will help you assess your progress to determine whether you need to modify your goals. Self-assessment can easily be done by monitoring and documenting your progress. You can also take advantage of prepared assessment programs, which your physical education instructor can recommend.

SKILLS FOR HEALTH AND WELLNESS

Increasing Fitness

The following strategies can help you start, and maintain, a fitness program.

- Create a written weekly schedule of physical activities. Choose times and days that work best for you.
- Select physical activities that you enjoy doing. For instance, some people like competitive team sports, such as basketball or volleyball. For others, group activities, such as a yoga class or a running club, are most rewarding. Some people prefer individual activities, such as lifting weights or swimming.
- Find family members or friends who want to exercise with you. It is often more fun to exercise with a partner.
- Find ways to incorporate physical activity into your daily life. Do sit-ups or push-ups while you watch television, walk upstairs instead of taking an elevator, or go for a walk after dinner instead of watching television.
- Start slowly if you are new to exercise. You don't want to overdo it and become injured. Set smaller goals at first and work toward bigger goals.
- Exercise safely to avoid injury that could cause you to stop being physically active. Use the right equipment for your activity; take time to warm up and cool down; and drink water before, during, and after engaging in physical activity.

Be Safe and Effective. Above all, you should choose exercises and fitness activities that are safe and effective. This will ensure that you stay on track and meet your fitness goals.

Some fitness products are advertised as being highly effective at helping people burn calories, increase strength, or change their body's shape in some way. These advertisements may not be entirely truthful. Before you buy a new fitness product, such as special shoes, carefully evaluate the evidence showing this product's effectiveness.

If a new fitness product sounds too good to be true, it probably is. Find out more about the product from an objective source, such as a newspaper article or an adult you trust, before spending money or time on something that may not really help improve your fitness.

Learning More. As you monitor and continue to improve your fitness, you may want to learn more about how your body works. If you chose to study kinetics or biomechanics, for example, you would learn how to use to your benefit the internal and external forces that act on your body. Understanding principles such as force, pressure, torque, compression, and tension can help you avoid injuries. Studying these topics on your own or in college classes later in life can be interesting and help you reach your maximum fitness levels.



Figure 6.18

Most people who water ski do so for fun. Suppose, however, that this girl is water skiing as part of a cross training program. *In what other sports might she improve her skills as a result of her water skiing?*

Lesson 6.2 Review

Know and Understand



Assess

Name the health-related and skill-related components of fitness. ⁽⁴⁾ ⁽⁶⁾ 10 pts

How much physical activity per week is recommended for cardiorespiratory fitness? p. 171

What fitness factors are represented by the acronym FITT? p. 171

Where can you check your pulse?

Calculate the target heart rate range for moderate-intensity physical activity for a 22-year-old (round up to the nearest whole number). p. 172

List four types of resistance used in strength training. p. 175

Explain the three training principles discussed in this lesson. p. 180

Analyze and Apply

Compare and contrast the health-related benefits of activities such as weight lifting and running marathons.

- What components will improve*
- Select a sport or physical activity and evaluate *them* the three most important components of fitness it requires to be successful. *you selected.*
 - Explain the effect of cardiorespiratory activity on your body during and after exercise. p. 171
 - Select an advertisement for a fitness product or program and evaluate it for accuracy.
 - Design a personal fitness plan that uses training principles to maximize your health benefits.

Real World Health

In this lesson you learned about ways to increase your physical fitness levels. You read that you need to exercise for a minimum of 10 minutes to start a fitness plan. Create an advocacy contest to get your entire school to "Take Time for Ten." Create a poster or brochure that explains your contest and what people must do to win. Be sure to include a prize!