

## CHAPTER 1 PHYSICAL FITNESS AND WELLNESS

*“The power of prevention is yours, it enables you to make lifestyle changes that will prevent disease and increase the quality and length of your life.”*

### OBJECTIVES

- Understand the health and fitness consequences of physical inactivity.
- Identify the major health problems in the United States.
- Learn how to monitor daily physical activity.
- Learn the Federal Physical Activity Guidelines for Americans.
- Define wellness and list its dimensions.
- Define physical fitness and list health-related and skill-related components.
- State the differences among physical fitness, health promotion, and wellness.
- Distinguish between health fitness standards and physical fitness standards.
- Understand the benefits and significance of participating in a comprehensive wellness program.
- List key national health objectives for the year 2020.
- Determine if you can safely initiate an exercise program.
- Learn to assess resting heart rate and blood pressure.

### MINDTAP

Chronicle your daily activities using the exercise log.

Determine the safety of exercise participation using the Physical Activity Readiness Questionnaire (PAR-Q) and the health history questionnaire.

Check your understanding of the chapter contents by logging on to MindTap and assessing the pre-test, personalized learning plan, and post-test for this chapter.

### FREQUENTLY ASKED QUESTIONS

Why should I take a fitness and wellness course? It will teach you how to live life to its fullest potential.

Is the attainment of good physical fitness sufficient to ensure good health? Good health is the result of a deliberate effort to achieve the highest potential for well-being within all seven dimensions of wellness.

If a person is going to do only one thing to improve health, what would it be? Regular physical activity and proper nutrition should be the first concerns even though other unhealthy behaviors should also be deliberately changed.

### REAL LIFE STORY

Jim’s discovery that the “little things” make a big difference, both in negative and positive ways.

### EXPANDED CHAPTER OUTLINE

- I. INTRODUCTION
  - A. Health and longevity (Figure 1.2)
    1. Are determined by genetics, the environment, and personal behavior.
    2. The environment and personal behavior can be changed.
  - B. Inactivity speeds deterioration of the body and threatens health.
  - C. Industrialized nations are facing an epidemic of inactivity termed **Sedentary Death Syndrome (SeDS)**.
  - D. As **life expectancy** increased over the last century, the leading causes of death changed (Figure 1.1).

1. Once a major health concern, infectious diseases were largely eliminated through medical breakthroughs.
  2. Surviving infectious disease and other “good life” benefits of technology increased life expectancy but also encouraged **chronic diseases**.
- E. The fitness and wellness movement resulted from the need to combat chronic disease.
1. The focus became disease prevention through a healthy lifestyle, rather than disease treatment through medicine.
  2. Living longer and with greater daily “quality of life” is the expected result.
- F. Despite a higher **life expectancy** than in the past, the United States still lags behind other countries (Figure 1.3).
1. The present average life expectancy in the U.S. is 78.7 years (76.7 for men and 81.1 for women). It was 47 years in 1900.
  2. The World Health Organization (WHO) calculated the rank of the U.S. as 28<sup>th</sup> in the world for life expectancy. Life expectancy in the U.S. slipped over the years of 2000 to 2010 from 18<sup>th</sup> to 24<sup>th</sup> for men and 28<sup>th</sup> to 35<sup>th</sup> for women.
  3. This low rating is surprising given the excellent medical care system in the U.S.
  4. Factors contributing to the low life expectancy in the U.S. include:
    - a. Extremely poor health of certain groups in the U.S.
    - b. The obesity epidemic in the U.S.
    - c. Low levels of daily physical activity in the U.S.
    - d. High incidence of tobacco use in the U.S.
    - e. High incidence of **coronary heart disease** in the U.S.
    - f. Fairly high levels of violence in the U.S.
  5. The National Institute of Aging predicts that life expectancy in the U.S. may decrease (as many as five years) in the coming decades due to increased obesity in the population.
- II. LEADING HEALTH PROBLEMS IN THE UNITED STATES
- A. **Degenerative diseases** are the most prevalent health problems.
1. Cardiovascular disease and cancer comprise approximately 53 percent of all deaths (Figure 1.4).
  2. The third and fourth leading causes are chronic lower respiratory disease (CLRD) and accidents, but they lag far behind at just over 10 percent of all deaths combined.
- B. **Cardiovascular disease** is the leading cause of death.
1. About 30 percent of all deaths are caused by cardiovascular dysfunction.
- C. **Cancer** is the second leading cause of death.
1. Various cancers cause about 23 percent of all deaths.
  2. 80 percent of cancer can be prevented through positive lifestyle choices.
- D. **Chronic lower respiratory disease (CLRD)** is the third leading cause of death.
1. Tobacco use is the greatest risk factor.
- E. **Accidents** are the fourth leading cause of death.
1. Alcohol abuse is the number one cause of all accidents.
  2. An estimated 1.6 million car accidents each year are caused by drivers using cell phones or texting.
- III. LIFESTYLE AS A HEALTH PROBLEM
- A. Most of the leading underlying causes of death are related to lifestyle (Figure 1.5).
- B. The **big five** underlying causes of death are tobacco smoking, high blood pressure, overweight and obesity, physical inactivity, and high blood glucose.
- C. Because genetics is estimated to be only 16 percent of disease risk, individuals have control of as much as 84 percent of disease risk, and thus quality of life.
- IV. PHYSICAL ACTIVITY AND EXERCISE DEFINED
- A. **Physical activity** is any bodily movement produced by the skeletal muscles throughout the day.
1. Examples are destination walking, stair climbing, gardening, doing chores, dancing, and washing the car.
  2. Inactivity is a level of activity that is lower than that required to maintain good health.

- B. **Exercise** is a type of physical activity.
1. It requires “planned, structured, and repetitive bodily movement to maintain one or more components of physical fitness.”
  2. It is usually viewed as requiring high-intensity effort.
  3. Examples are walking, running, cycling, aerobics, swimming, and strength training.

V. **IMPORTANCE OF INCREASED PHYSICAL ACTIVITY**

- A. **Moderate physical activity** defined:
1. Using at least 150 calories of energy per day or 1,000 calories per week.
  2. This translates into about 30 minutes of physical activity most days of the week.
- B. General benefits of moderate physical activity:
1. Increases fitness.
  2. Decreases risk for chronic disease and disabilities.
  3. Prevents premature mortality.
  4. Prevents unhealthy weight gain.
- C. Specific benefits of moderate physical activity:
1. Lower risk of developing or dying from heart disease, type 2 diabetes, colon cancer, high blood pressure, and osteoporotic fractures.
  2. Improved health of muscle, bones, and joints.
  3. Reduced symptoms of depression and increased ability to perform daily tasks.
  4. Lower health care costs and higher quality of life.

VI. **NATIONAL INITIATIVES TO PROMOTE HEALTHY AND ACTIVE LIFESTYLES (Federal Guidelines for Physical Activity)**

- A. Recommendations for **Adults 18–64 Years of Age (Table 1.1)**:
1. Moderate-intensity aerobic physical activity for 150 minutes per week.
  2. Somewhat less time is required when performing vigorous-intensity activity.
  3. Minimal duration of an aerobic activity episode is 10 minutes.
  4. Health benefits increase with up to 300 minutes of moderate-intensity activity or 150 minutes of vigorous-intensity activity.
  5. Muscle-strengthening activity is suggested twice per week.
- B. Recommendations for **Adults 65 Years of Age and Older**:
1. Same as for younger adults, as abilities allow.
  2. Inactivity should be avoided.
  3. Exercises that maintain or improve balance are suggested.
- C. Recommendations for **Children 6 Years of Age through Adolescent Ages**:
1. Sixty minutes of physical activity every day.
  2. Vigorous activity 3 days each week.
  3. Muscle-strengthening and bone-strengthening activities at least 3 days each week.
- D. Recommendations for **Pregnant and Postpartum Women**:
1. Moderate-intensity aerobic physical activity for 150 minutes per week.
  2. A health care provider should be consulted if higher intensity exercise is desired.

**Critical Thinking:** Do you consciously incorporate physical activity throughout the day into your daily lifestyle? Can you provide examples? Do you think you get sufficient daily physical activity to maintain good health?

VII. **NATIONAL HEALTH OBJECTIVES FOR THE YEAR 2020**

- A. Each decade, the U.S. Department of Health and Human Services releases a list of objectives for preventing disease and promoting health.
- B. A summary of **key 2020 objectives** is listed in Figure 1.7.
- C. Three main points of these objectives:
1. Individuals need to be more health conscious and responsible for becoming healthier.
  2. Health benefits should be extended equally to all parts of the community.
  3. Preventative techniques should replace many traditional treatment practices.

## VIII. NATIONAL PHYSICAL ACTIVITY PLAN

- A. Established in 2010, the plan calls for policy, environmental, and cultural changes to help all Americans enjoy the health benefits of physical activity.
- B. Complements the Federal Physical Activity Guidelines and the healthy People 2020 objectives.
- C. Requires cooperation among school officials, city/county council members, state legislators, corporations, and Congress.

## IX. MONITORING DAILY PHYSICAL ACTIVITY

- A. Current activity levels of adults in the U.S. (Figure 1.8):
  1. Only 19.4 percent of U.S. adults meet the federal physical activity guidelines for both aerobic and muscular fitness.
- B. An excellent tool to monitor daily activity is a **pedometer**.
  - 1.
  2. The daily recommendation is 10,000 steps per day (Table 1.2).
  3. Table 1.3 can help calculate the amount of walking/jogging activity required to achieve the 10,000 step equivalency.
- C. “Sitting Disease” is another serious risk factor for diseases: the more time you spend sitting each day, the higher your chances of adverse health effects.
  1. Everyone should try to increase **nonexercise activity thermogenesis (NEAT)** by moving for at least 10 minutes of every waking hour.

## X. WELLNESS

- A. Besides physical fitness, other risk factors for chronic disease include high blood pressure, smoking, constant stress, excessive alcohol, and high dietary fat intake.
- B. Preventing risk factors from developing, **primordial prevention**, is a new concept that is gaining popularity.
- C. **Wellness** defined:
  1. A constant and deliberate effort to stay healthy and achieve the highest potential for well-being.
  2. Overall wellness can be separated into seven personal **dimensions** (Figure 1.9):
    - a. Physical
    - b. Emotional
    - c. Mental
    - d. Social
    - e. Environmental
    - f. Occupational
    - g. Spiritual
- D. **Health promotion** is the science and art of enabling people to increase control over their lifestyle to move toward a state of wellness.

## XI. THE SEVEN DIMENSIONS OF WELLNESS

## A. Physical Wellness

1. The dimension most commonly associated with being healthy.
2. Physically well individuals are physically active, eat well, maintain healthy body weight, get sufficient sleep, are environmentally aware, know disease risk factors, and control addictions.
3. The health-related components of **physical fitness** (wellness) are:
  - a. Cardiorespiratory fitness.
  - b. Body composition.
  - c. Muscular strength and endurance.
  - d. Flexibility.

## B. Emotional Wellness

1. Defined as the ability to understand feelings and limitations.
2. Involves stability:
  - a. Ability to enjoy success.
  - b. Ability to keep perspective in failure.
3. Involves happiness:

- a. A sense of daily meaning.
- b. Results from relationships of giving and receiving love.
- c. Results in freedom from long-term tension and depression.

**C. Mental Wellness**

1. Allows for appropriate applications of learning in new experiences.
2. Includes awareness of beliefs and values.
3. Presents a reserve of energy to be open-minded, curious, and respectful.
4. Contributes to self-confidence.

**D. Social Wellness**

1. Fuels a positive self-image.
2. Involves respect for other persons and concern for the environment.
3. Includes personal characteristics of honesty and loyalty.

**E. Environmental Wellness**

1. Is needed for people to function with health.
2. Comes from a sense of responsibility for the welfare of others and the state of one's surroundings.
3. Environmentally conscious steps include:
  - a. Energy conservation.
  - b. Not littering.
  - c. Recycling.
  - d. Conserving paper.
  - e. Conserving water.
  - f. Planting and maintaining flora.
  - g. Making purchases with an informed environmental mind.
  - h. Donating clothes.
  - i. Enjoying the outdoors.

**F. Occupational Wellness**

1. Results from the work setting being perceived as rewarding.
2. The occupation can bring excitement, skill development, recognition, a sense of teamwork, and various types of support.

**G. Spiritual Wellness**

1. Flows from purpose and meaning in life.
2. Results in freedom, faith, love, closeness to others, peace, joy, and fulfillment.
3. Is associated with better health, less distress, and a higher quality of life.
4. Is reported to strengthen the immune system, promote mental health and memory, as well as decrease depression, chronic inflammation, mortality, and suicide incidence.
5. **Prayer** is a hallmark of spirituality as praise, thanksgiving, and requests are communicated to a higher being.
6. Prayer offered in love, empathy, and compassion has been shown to affect the health status of those prayed-for.
7. True concern for the welfare of others is called **altruism**. Spiritual, altruistic people live longer and experience improved immune systems.

**Critical Thinking:** Now that you understand the seven dimensions of wellness, rank them in order of importance to you and explain your rationale in doing so.

**XII. WELLNESS, FITNESS, AND LONGEVITY**

- A. Research in the second half of the 20<sup>th</sup> century showed that good fitness improves cardiovascular function.
  1. Because of increased participation in wellness programs and treatment modalities, cardiovascular disease dropped 26 percent from 1960 to 2000, with another 10 percent drop from 2000 to 2010.
  2. The Harvard alumni longitudinal study demonstrated a strong link between physical inactivity and premature cardiovascular mortality (Figure 1.11).

- B. More recent studies confirmed the inverse relationship of activity and disease risk.
1. A study found the least-fit group to have greater risk (almost 2-fold compared to moderately-fit; 4-fold compared to most-fit) for all-cause and cardiovascular mortalities.
  2. Another study found those adhering to four health habits (lifetime nonsmoking, not obese, at least 3.5 hours of physical activity weekly, and healthy nutritional choices) were 78 percent less likely to develop chronic diseases (diabetes, heart disease, stroke, and cancer).
  3. **Vigorous activity** (at least 6 METs; six times resting metabolism) was found to be associated with greater life longevity and substantial health benefits according to a dose-response relationship.
- XIII. TYPES OF PHYSICAL FITNESS
- A. Physical fitness can be divided into health-related, skill-related, and physiologic components.
- B. The **health-related fitness** components are cardiorespiratory endurance, body composition, muscular flexibility, and muscular strength and endurance (Figure 1.12).
1. Related to being able to perform daily activities without undue fatigue as well as a reduction in risk for hypokinetic diseases.
  2. These physical fitness components are more directly related to disease risk.
  3. Of the four components, the level of cardiorespiratory endurance affects the greatest risk for cardiovascular disease.
- C. The **skill-related fitness** components are agility, balance, coordination, reaction time, speed, and power (Figure 1.13).
1. High levels are important in athletics.
  2. Minimal levels should be maintained, but they are not directly related to risk of chronic disease.

**Critical Thinking:** What role do the four health-related components of physical fitness play in your life? Rank them in order of importance to you and explain the rationale you used.

- XIV. FITNESS STANDARDS: HEALTH VERSUS PHYSICAL FITNESS
- A. Health Fitness Standards
1. Health benefits occur with moderate levels of physical fitness (Figure 1.14).
    - a. Enhanced health occurs with initiation of an active lifestyle.
    - b. Improved insulin sensitivity, glucose tolerance, and cholesterol levels of the individual's **metabolic profile** can occur with merely a small change in aerobic capacity and body weight.
    - c. High physical fitness does not greatly improve health more than what is required for the health fitness standard.
  2. The health fitness standard represents the minimum threshold of activeness that is related to significant health benefits.
    - a. This is estimated to be oxygen consumption capacities of 35 and 32.5 ml/kg/min (men and women, respectively) for estimation of **cardiorespiratory endurance**.
    - b. Greater cardiorespiratory endurance only slightly improves risk for disease.
- B. Physical Fitness Standards
1. Physically-fit individuals enjoy greater recreational and workplace function.
  2. Physical fitness standards exist to indicate an ability to perform vigorous daily tasks, such as changing a tire, chopping wood, climbing stairs, or playing basketball.
- XV. BENEFITS OF A COMPREHENSIVE FITNESS PROGRAM
- A. Immediate (Acute) Benefits of Exercise (Table 1.4)
1. Increases heart rate, stroke volume, cardiac output, pulmonary ventilation, and oxygen uptake.
  2. Begins to strengthen the heart, lungs, and muscles.
  3. ~~Enhances metabolic rate or energy production.~~
  4. Uses blood glucose and muscle glycogen.

5. Improves insulin sensitivity.
6. Enhances the ability to burn fat.
7. Lowers blood lipids.
8. Improves joint flexibility.
9. Reduces low grade inflammation.
10. Increases endorphin levels.
11. Increases fat storage/availability in muscle.
12. Improves endothelial function.
13. Enhances mood and self-worth.
14. Provides a sense of achievement and satisfaction.
15. Decreases blood pressure immediately following exercise.
16. Decreases arthritic pain.
17. Leads to muscle relaxation.
18. Decreases stress.
19. Improves brain function.
20. Promotes better sleep.
21. Improves digestion.
22. Boosts energy levels.
23. Improves resistance to infections.

B. Long-term Benefits of Exercise (Table 1.5)

1. Improves and strengthens the cardiorespiratory system.
2. Maintains better muscle tone, muscular strength, and endurance.
3. Improves muscular flexibility.
4. Enhances athletic performance.
5. Helps maintain recommended body weight.
6. Helps preserve lean body tissue.
7. Increases resting metabolic rate.
8. Improves the body's ability to use fat during physical activity.
9. Improves posture and physical appearance.
10. Improves functioning of the immune system.
11. Lowers the risk for chronic diseases and illnesses.
12. Decreases the mortality rate from chronic diseases.
13. Thins the blood so it doesn't clot as readily.
14. Helps the body manage cholesterol levels more effectively.
15. Prevents or delays the development of high blood pressure and lowers blood pressure in people with hypertension.
16. Helps prevent and control diabetes.
17. Helps achieve peak bone mass in young adults and maintain bone mass later in life, thereby decreasing the risk for osteoporosis.
18. Helps people sleep well.
19. Helps prevent chronic back pain.
20. Relieves tension and helps people cope with life's stresses.
21. Raises levels of energy and job productivity.
22. Extends longevity and slows the aging process.
23. Promotes psychological well-being and better morale, self-image, and self-esteem.
24. Reduces depression and anxiety.
25. Motivates a person to make positive lifestyle changes.
26. Speeds recovery time following physical exertion.
27. Speeds recovery following injury or disease.
28. Regulates and improves overall body functions.
29. Improves physical stamina and counteracts chronic fatigue.
30. Helps maintain independent living, especially in older adults.
31. Enhances quality of life: People feel better and live a healthier and happier life.

C. Exercise and Brain Function

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1. ~~Higher levels of fitness are associated with better academic grades.~~
  2. Greater amounts of blood and oxygen are delivered to the brain.

3. Muscular activity stimulates growth factors to create nerve cells and improve impulse transmission in the brain.
  4. Exercise increases neurotransmitter levels in the brain.
  5. Physical (particularly aerobic) activity reduces age-related losses in brain function.
- D. Economic Benefits
1. Health care costs have risen exponentially from 1950 to the present (Figures 1.15, 1.16, and 1.17), are almost twice as high as most other industrialized nations, and could have been attenuated by disease prevention.
  2. Unhealthy behaviors have contributed to the costs.
    - a. Smoking easily leads the pack.
    - b. Obesity, excessive alcohol, high blood pressure, high cholesterol, and not using seat belts are significant contributors.

#### XVI. THE WELLNESS CHALLENGE FOR OUR DAY

- A. Research indicates the following will significantly improve health and extend life (Behavior Modification Planning Box: Healthy Lifestyle Habits):
1. Participate in a lifetime physical activity program.
  2. Do not smoke cigarettes.
  3. Eat right.
  4. Avoid snacking.
  5. Maintain recommended body weight through adequate nutrition and exercise.
  6. Sleep 7 to 8 hours every night.
  7. Lower your stress levels.
  8. Be wary of alcohol.
  9. Surround yourself with healthy friendships.
  10. Be informed about the environment.
  11. Increase education.
  12. Take personal safety measures.
- B. Americans do not make progress in many of these areas because they do not know how to implement a safe and effective fitness and wellness program.

**Critical Thinking:** What are your thoughts about lifestyle habits that enhance health and longevity? How important are they to you? What obstacles keep you from adhering to these habits or incorporating new habits into your life?

#### XVII. WELLNESS EDUCATION: USING THIS BOOK

- A. Wellness education is instrumental in emphasizing to young people the value of maintaining fitness and wellness, as well as correcting deficiencies early in life.
- B. This text has tear-out pages (usually at the end of each chapter) to assist in the teaching and learning process.
- C. Exercise Safety
1. Activity 1.1, **Daily Physical Activity Log**, can be used to set a baseline for prescription and exercise.
  2. Activity 1.2, **Wellness Lifestyle Questionnaire**, can be used to heighten student awareness of their personal level of wellness practices.
  3. Before testing (usually a vigorous cardiovascular procedure), have the students fill-out Activity 1.3, **PAR-Q and Health History Questionnaire**, so potential discomforts or dangers are disclosed.
  4. Activity 1.4, **Resting Heart Rate and Blood Pressure**, is used to determine heart rate and blood pressure as well as to calculate the extra heart rate life years an increase in exercise might produce.
  5. Activity 1.5, **Dimensions of Wellness: Setting Your Goals**, can be used to help students see the bigger wellness picture in their life as well as the part that physical activity has to play in achieving overall wellness.

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#### XVIII. ASSESSMENT OF RESTING HEART RATE AND BLOOD PRESSURE



- A. Assessing Resting Heart Rate (Activity 1.4)
  1. The radial and carotid arteries are common locations.
  2. Either count for 30 (multiply by 2) or 60 seconds and then express as beats per minute.
  3. Take after sitting quietly for 30 minutes.
  4. Heart rate categories are shown in Table 1.6.
  5. A lower resting heart rate usually means a more effective (stronger) heart.
  6. Activity 1.4 assists in calculating the effects of aerobic activity on resting heart rate.
- B. Assessing Blood Pressure (Table 1.7; Activity 1.4)
  1. Use a sphygmomanometer and a stethoscope.
  2. Apply the blood pressure cuff to the upper arm about 1 inch above the antecubital space, and the stethoscope over the brachial artery (in the middle of the bend in the arm).
  3. Inflate the cuff slightly above predicted systolic blood pressure.
  4. After inflation and slow reduction of cuff pressure, **systolic pressure** is recorded on the sphygmomanometer dial when the sound of the pulse can be heard in the stethoscope.
  5. The loudness of the pulse sound will then reduce as the pressure in the cuff decreases.
  6. Diastolic pressure is recorded when the sound of the pulse first cannot be heard with the normal heart rhythm.
  7. Activity 1.4 also assists in calculating mean blood pressure.

## CHAPTER 1

### CARDIORESPIRATORY ENDURANCE

#### LABORATORY DESCRIPTION

<b>RESTING BLOOD PRESSURE</b> (Table 1.7 and Activity 1.4)
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#### Theory

##### Main point

⇒ The lower the blood pressure, the healthier the cardiovascular system (heart and blood vessels).

##### Supporting points

1. Unless the heart is weak, diastolic (and therefore systolic) blood pressure indicates blood vessel resistance.
2. With atherosclerosis (and subsequent arteriosclerosis), the blood vessels lose compliance (elasticity and nervous system control) and require the heart to work against higher blood pressures to deliver blood.
3. Aerobic training increases the strength of the heart to function, with or without blood vessel compliance.
4. High blood pressure may indicate coronary flow inadequacies, leaving the heart deficient when larger volumes are needed to function (exercise and emergencies).

##### Assumption

⇒ Individuals are relaxed and not unusually apprehensive about the testing.

#### Procedure

1. Make sure all individuals are safe to participate in the test.
2. Place the cuff bladder of the sphygmomanometer approximately 1 inch above the antecubital space.
3. Put the rest of the sphygmomanometer at heart level.
4. Place the stethoscope head at the base of the cuff above the antecubital space.
5. Inflate the cuff 30–40 mm Hg above expected blood pressure or higher than when a radial pulse is lost.
6. Release the pressure slowly, noting when the pulse first is audible through the stethoscope (systolic pressure) and when the clear pulse sound first disappears (diastolic pressure).
7. Allow 1 minute and fully deflate the cuff if the procedure is to be repeated.

#### Evaluation

1. Use Table 1.7 to classify the blood pressure readings of each individual.
2. Record results in Activity 1.4.

## CHAPTER 1

### PHYSICAL FITNESS AND WELLNESS

#### CLASSROOM ACTIVITIES

#### CARTOONS

Use popular cartoons to illustrate overall wellness ideas. Many of them deal with exercise, nutrition, weight control, stress, addictions, and overall philosophy of life.

#### PROGRESS REPORTS

Give simple prospective and retrospective quizzes to keep the students reading and thinking.

1. Put multiple-choice, true–false, or short answer questions on a half-sheet of paper.
2. This requires students to make a commitment to some controversial choices.
3. Use the questions as an outline for topics of the day.

#### THE DIMENSIONS OF WELLNESS (Figure 1.9)

1. Discuss whether any of the wellness dimensions can be described without connection to the others.
2. Example: When a person has the stomach flu, are the others changed?
3. Example: How is spiritual wellness involved? It relates to one’s sense of purpose in life.
4. When physical wellness is improved, so are the others. This is a focus of the course.

#### PHYSICAL FITNESS COMPONENTS (Figures 1.12 and 1.13)

1. Which group of components is most related to chronic degenerative disease? The health-related components.
2. Have students identify the different components of skill-related fitness and health-related physical fitness.
3. Are the skill-related components important? Yes, a minimal level is desired for everyday function.
4. Chapters 4–8 expand on the health-related physical fitness components.

#### CAUSE OF DEATH (Figure 1.1)

1. Ask why infectious disease decreased but chronic degenerative disease increased over the last century. Personal responses to technological advances are responsible for these changes in workplace and recreational lifestyles.
2. People who live longer are more susceptible to chronic disease (they did not die of an infectious disease).
3. Mathematically, when greatly reducing one cause of death, the incidence percentage of all others will increase.
4. Ask why cardiovascular disease began to decrease after the 1960s. The fitness “fad” (that continues to this day) has slowed the process of cardiovascular disease in those who “stay fit.”

#### HOW MUCH EXERCISE IS ENOUGH? (Figures 1.10, 1.11, and 1.14)

1. Ask students how much exercise is needed for a person to be “fit.” Listen for exercise and daily lifestyle answers.
2. In terms of laboratory measurement status? The health fitness standards.

3. In terms of behavior? 2,000 calories each week of exercise and lifestyle activity (1,000 calories of each per week or about 150 calories of each per day).

### **HOW CAN I GET 10,000 STEPS? (Table 1.2; Activity 1.1)**

1. Use Table 1.2 (Adult Activity Levels Based on Total Number of Steps Taken per Day) to begin discussion of how much activity is needed each day for wellness.
2. Translate miles of jogging/running into walking steps but also translate the time or calories of nonstepping activities into “steps” (using 1 mile = 2,000 steps = equivalent nonstepping exercise “miles”).
3. Then ask for method or practice strategies to increase the number of steps in a day. List these visually to motivate student participation.
4. Goal orientation and accountability methods should be listed (pedometers, commitments to exercise groups, gently competitive promotions, regular physical assessments, etc.).
5. Finish with a discussion of what might be the surprising benefits (other than the desired fitness goals) of the increased level of activity.

### **BENEFITS OF A COMPREHENSIVE WELLNESS PROGRAM**

1. Ask the students how they expect to benefit from engaging in exercise and positive lifestyle decisions. Have them make their “Top Ten.”
2. Ask why they should think about these things now when the average college student is far fitter than the average American. Prevention is a large aspect of lifetime wellness.

### **IMPROVE THEIR LIFESTYLE**

1. Ask students to list their daily activities on a timeline you provide.
2. Pair them up, switching timelines.
3. Have each student ask lifestyle-related questions about the other student’s schedule.
4. They will have some fun, but they will also (if you frame the task well) share ideas that may come to mind later in the actual daily routine.

### **IDEAL GOALS (Activity 1.5)**

1. Have students list on the left side of a paper (or a form you provide) what life problems they are encountering.
2. Give examples to cover all aspects of wellness as they think and write.
3. Ask them to follow up and list the ideal solution(s) on the right side of the paper.
4. Lead discussion (and develop interaction) while asking for volunteer information from the students’ lists.
5. Relate to Activity 1.5 or use this discussion as a lead-up to Activity 1.5, Dimensions of Wellness: Setting Your Goals.

### **HOW DO WE STOP HEALTH CARE COST ESCALATION? (Figure 1.15)**

1. Why is health care expensive in the U.S.?
  - a. Widely-available state-of-the-art technology
  - b. Medical specialization
  - c. Malpractice insurance and general liability
  - d. Low personal health of the population
2. What have large corporations done? They have promoted fitness and wellness.
  - a. This has made them a profit!
  - b. Corporate benefits include higher productivity, higher employee morale, less absenteeism, and lower health care costs.
3. What can an individual do to keep health care costs from continually rising? Be preventative about personal health instead of waiting for something to go wrong.

### **HEART RATE PRACTICE (Table 1.6; Activity 1.4)**

1. Demonstrate the two most common sites to check heart rate: the radial and carotid arteries.
2. Give 10-second timings while the students check each one.
3. Have nearby students assist when there is difficulty locating a pulse.

### **GAIN SOME HEARTBEATS? (Activity 1.4)**

1. Discuss the theory that a person has a finite number of heartbeats in a lifetime.
2. Have the students complete Activity 1.4 to determine whether they would gain or lose heartbeats by having cardiorespiratory fitness.

### **BLOOD PRESSURE PRACTICE (Laboratory Description section; Table 1.7; Activity 1.4)**

1. Review blood pressure assessment anatomy and physiology (see Laboratory Description section).
2. Demonstrate placement of the sphygmomanometer and stethoscope.
3. Practice listening for the Korotkoff sounds and blood pressure readings.
4. Compare to Table 1.7 for evaluation.

### **GUEST SPEAKERS**

Invite a representative from the American Heart Association, Red Cross, or another health professional to speak on community health and preventative lifestyles.

### **QUESTIONNAIRES**

Have the students fill out the:

1. Wellness Lifestyle Questionnaire (Activity 1.2)—analyzes current lifestyle habits to determine necessary changes.
2. PAR-Q and Health History Questionnaire (Activity 1.3)—screens for contraindications for exercise.

**INTERPRETING THE REAL LIFE STORY: Jim's Experience**

Jim was always athletic and was raised in a household where eating healthy was the norm. But after he arrived at college, he fell into habits that were detrimental to his health. His sleep schedule was irregular and he often pulled "all-nighters." His stress levels were very high, he fought with his roommates a lot, and he felt isolated and depressed. He also drank too much alcohol and often had to deal with hangovers. At one point, he injured his knee through high-impact and repetitive exercise. After taking a fitness and wellness class, he made changes to his lifestyle, including evening out his sleep schedule, relieving stress with meditation or listening to music instead of with alcohol, and learning how to exercise in ways that prevent injury. Jim learned that small decisions can have a big impact.

**Critical Thinking Questions**

1. Can you identify small decisions that led to big, negative problems in Jim's life? What small, positive steps did he take to reap big rewards in his life?
2. What are your expectations for the fitness and wellness course you are taking? What benefits do you hope to obtain from the class, other than a passing grade?
3. What level of investment of time and energy are those benefits worth to you? What small steps can you take today to improve your fitness and wellness?

**WEB RESOURCES**

1. The [Healthy Living](http://www.cdc.gov/HealthyLiving/) section of the Centers for Disease Control and Prevention:: <http://www.cdc.gov/HealthyLiving/>
2. The [Healthy Living](http://www.nlm.nih.gov/medlineplus/healthyliving.html) section of the MedlinePlus website from the National Institute for Health: <http://www.nlm.nih.gov/medlineplus/healthyliving.html>
3. The [Physical Activity Guidelines](http://www.health.gov/paguidelines/) section of the U.S. Department of Health & Human Services website: <http://www.health.gov/paguidelines/>

**A note regarding the Online Journal:**

An Online Journal is offered as a gradable assignment in MindTap. If you do not use MindTap in your course, an alternate online journal can be used. One alternative is Penzu Classroom. Penzu Classroom allows students to register for an online journal for free with a specific class code as set up by you, the instructor. These journals can be assigned and then auto-graded and returned to students electronically. Click here for more information and to sign up: <http://penzu.com/content/products/classroom>.