

# PART ONE



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## Achieving Wellness

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# Achieving Personal Health

### *Learning Objectives*

1. List the key points of the World Health Organization definition of health.
2. Describe the medical, environmental, and holistic models of health.
3. List and describe the six dimensions of wellness.
4. List the three health behaviors responsible for most of the actual causes of death.
5. Define lifestyle disease.
6. Identify the goals of Healthy People 2020.
7. List and describe the major health issues of college students.
8. Describe the Health Belief Model, Transtheoretical Model, and Theory of Reasoned Action/Theory of Planned Behavior.



Ask people what they mean by “being healthy” or “feeling well” and you probably will get a variety of answers. Most people usually think of health as the absence of disease. But what about someone who has a relatively harmless genetic disorder, such as an extra toe? Is this individual less healthy than a person with the usual number of toes? Different perhaps, but not necessarily less healthy. Are you less well when you are struggling with a personal problem than when you are out having fun? Finding an

acceptable, generally useful definition of health or wellness is not a simple task.

It is true that not feeling sick is one important concept of health. Just as important, however, is the idea that health is a sense of optimum well-being—a state of physical, mental, emotional, social, and spiritual wellness. Con-

The health of a people is really the foundation upon which all their happiness and all their powers as a state depend.

*Benjamin Disraeli*

tained in this view is the idea that health can be obtained by living in harmony with yourself, with other people, and with your social and physical environments. You foster your own health and well-being when you take responsibility for avoiding harmful behaviors (e.g., not smoking cigarettes) and limiting your exposure to health risks (e.g., not drinking alcohol and driving; limiting the consumption of junk food), and by undertaking healthy behaviors and practices such as consuming nutritious food, exercising regularly, attending to your mental well-being, and supporting actions that contribute to the health and well-being of your community (e.g., limiting pollution).

Throughout this book, we show you ways to maximize your health by understanding how your mind and body function, how to limit exposure to pollution and toxic substances, how to make informed decisions about health and health care, how to be responsible for your actions and behaviors, and how social, economic, and political forces affect your ability to lead a healthy life. Learning to be responsible for the degree of health and vitality you want while you are young helps to ensure lifelong wellness and the capacity to cope with sickness when it does occur.

## The Definition of Health

Health, like love or happiness, is a quality of life that is difficult to define and virtually impossible to measure. The World Health Organization (WHO) defines **health** as “a state of complete physical, mental, and social well-being and not merely the absence of disease and infirmity.” This definition is so broad and covers so much that some people find it meaningless. Its universality, how-

ever, is exactly right. People’s lives, and therefore their health, are affected by every aspect of life: environmental influences such as climate; the availability of nutritious food, comfortable shelter, clean air to breathe, and pure water to drink; and other people, including family, lovers, employers, coworkers, friends, and associates of various kinds.

The WHO definition of health takes into account not only the condition of your body but also the state of your mind. Your mental processes are perhaps the most important influences on your health, because they determine how you deal with your physical and social surroundings, what attitudes about life you have, and how you interact with others.

Health as the totality of a person’s existence recognizes the interrelatedness of the physical, psychological, emotional, social, spiritual, and environmental factors that contribute to the overall quality of a person’s life. All parts of the mind, body, and environment are interdependent.

Health is not static; it is a dynamic process that takes into account all the decisions we make daily, such as which foods we eat, the amount of exercise we get, whether we drink alcohol before driving, wear seat belts, or smoke cigarettes. Every choice we make potentially affects health and wellness. Sometimes the social and physical environments present obstacles to making healthful choices. For example, a person may know not to eat fatty, fast food every day, but this kind of food may be easier to obtain than healthier alternatives. Wellness includes recognizing that some social influences are not healthy and finding healthier alternatives. It also includes taking actions to make the social and physical environments healthier for all.

Health is not something suddenly achieved at a specific time, like getting a college degree. Rather, health is a process—indeed, a way of life—through which you develop and encourage every aspect of your body, mind, and spirit to interrelate harmoniously as much of the time as possible. Health means (1) being free from symptoms of disease and pain as much as possible; (2) being active, able to do what you want and what you must at the appropriate time; and (3) being in good spirits and feeling emotionally healthy most of the time.

Jesse Williams (1939), one of the founders of modern health education, described health as

that condition of the individual that makes possible the highest enjoyment of life, the greatest constructive work, and that shows itself in the best service to the world. . . . Health as freedom from disease is a standard of mediocrity; health as a quality of life is a standard of inspiration and increasing achievement.

This is a goal we believe in, and the content of this book reflects this view.

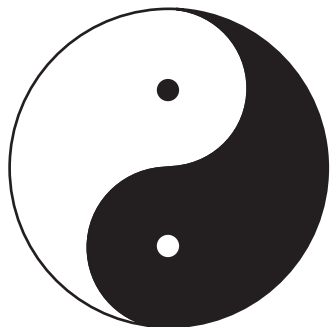
## Homeostasis and Health

Many of the vital functions in the body, such as breathing, heartbeat, blood circulation, digestion, and elimination, require no conscious effort. Rarely do you think about how often to breathe, or whether your heart needs to beat faster or slower. Your body has mechanisms for controlling and integrating its functions without conscious control, so that it maintains a relatively constant internal physiological environment. The tendency for body systems to interact and to maintain a constant physiological state is called **homeostasis**.

When you are well and healthy, your body systems function harmoniously. It is similar to the members of a team playing together in a coordinated way to accomplish the goals of the game. If one of your organs is not functioning properly, however, the other organs may not be able to function correctly either, and you may become ill. Thus, in Western medicine disease may be regarded as the disruption of homeostasis.

Many Asian philosophies embody an idea of mind-body harmony that is similar to the concept of homeostasis. This idea is based on a universal energy called **chi** (qi), which must be distributed harmoniously throughout the mind-body to attain and maintain health. Harmony is expressed as a balance of forces called yin and yang (**Figure 1.1**). Yin and yang represent the opposing and complementary aspects of the universal chi that is present in everything, including our bodies. Yang forces are characterized as light, positive, creative, full of movement, and having the nature of heaven. Yin forces are characterized as dark, negative, quiet, receptive, and having the nature of earth.

In Asian philosophies and medicine, body and mind are regarded as inseparable. Yin and yang apply to both mental and physical processes. When yin and yang forces



■ **Figure 1.1**

### The Yin–Yang Symbol

This symbol represents the harmonious balance of forces in nature and in people. The white and dark dots show that there is always some yin in a person's yang component and vice versa. The goal in life and nature, according to the traditional Asian view, is to maintain a harmonious balance between yin and yang forces.

are in balance in an individual, a state of harmony exists and the person experiences health and wellness. However, if either yin or yang forces come to predominate in a person, a state of disharmony is produced and disease may result.

Treatment of disease is designed to reestablish harmony of the mind and body. The balance of yin and yang forces must be restored so that health returns.

T'ai chi ch'uan and *qigong* (pronounced jê-kung) are two Chinese mind-body methods that are being practiced by more and more North Americans to help maintain health and harmony. These exercises are especially useful for older persons whose bodies can no longer manage vigorous exercise. People who practice *qigong* experience lower blood pressure, improved circulation, and enhanced immune system functions.

## Models of Health

Scientists and health educators have developed three main ways to define health: (1) the medical model, (2) the environmental model, and (3) the wellness, or holistic, model. In this book, we discuss aspects of the major models of health wherever appropriate. The models themselves are abstractions of ideas, but in real life one needs to use whatever is practical to optimize health and well-being.

### The Medical Model

The **medical model's** main tenet is that health is the absence of one or more of the “five Ds”—death, disease, discomfort, disability, and dissatisfaction. In other words, if you are not sick, disabled, or clinically depressed, you are defined as healthy. The medical model relies almost exclusively on biological explanations of disease and illness and is interpreted in terms of malfunction of organs, cells, and other biological systems (e.g., liver disease, heart disease, or osteoporosis).

### TERMS

**chi:** a Chinese term referring to the balance of energy in the body

**health:** state of sound physical, mental, and social well-being

**homeostasis:** the tendency for body systems to interact in ways that maintain a constant physiological state

**medical model:** interprets health in terms of the absence of disease and disability

Within the medical model, the health of a population is measured in terms of **vital statistics**, which are data on the degree of illness (**morbidity**) and the numbers of deaths (**mortality**) in a given population. Vital statistics include the following:

**Incidence:** the number of new cases of disease or illness during a particular time period, generally expressed per 100,000 population. Example: The annual incidence of chlamydia infection among U.S. college students is about 1,000/100,000.

**Prevalence:** the total number of people in a community, country, or other group with a particular health status. Example: The prevalence of high blood pressure among U.S. adults is about 50 million.

These statistical measurements allow comparisons between populations and also within the same population over time.

The medical model tends not to deal with social problems that affect health and only with difficulty integrates mental and behavioral issues that do not derive from diseased organs. In the medical model, health is restored by curing a disease or by restoring function to a damaged body part. Because it rarely considers psychological and social factors in the cause, diagnosis, treatment, and prevention of illness and disease, the medical model is limited.

The reliance on biological interpretations of illness has contributed greatly to the success of the medical model. Anyone who has been cured of a serious infection by taking antibiotics or undergone a lifesaving surgical procedure can attest to that. On the other hand, that same reliance on biological thinking has not furthered understanding of health and illness in terms of psychological and social factors, nor has it been very successful in encouraging healthy lifestyles, reducing unhealthy behaviors, and fostering a healthy environment.

For example, type 2 diabetes, which is now a world-wide pandemic, is caused by the excess consumption of high-fat, low-nutrient food and by modern lifestyles that lack most forms of physical activity. Research suggests that 92% of all type 2 diabetes cases could be avoided by changes in diet and lifestyle (Liebman, 2008). Rather than addressing personal living habits and social conditions, the response of the medical model to type 2 diabetes is to treat patients with drugs, surgery, or both to alter the biological aspects of the disease. In fact, surgically tying off most of the stomach in obese individuals is the fastest-growing surgical procedure in the United States. This surgery can lessen the symptoms of type 2 diabetes within days but does not resolve other dietary, lifestyle, and medical problems that persist.

### The Environmental Model

The **environmental model** of health emerged with modern analyses of ecosystems and environmental risks to human health. In this model, health is defined in terms of the quality of a person's adaptation to the environment as conditions change. This model (**Figure 1.2**) includes the effects on personal health of socioeconomic forces and status, education, and multiple environmental factors.

Unlike the medical model, which focuses on diseased organs and biological abnormalities, the environmental model focuses on conditions outside the individual that affect his or her health. These conditions include the quality of air and water, living conditions, access to nutritious food, exposure to harmful substances, socioeconomic conditions, social relationships, and the health-care system.

In many respects the environmental model of health is similar to ancient Asian and Native American philosophies that associate health with harmonious interactions with fellow creatures and the environment. In particular, as the environment changes, one's interaction with it must change to remain in harmony. Illness is interpreted as disharmony of human and environmental interactions.

### The Holistic Model

The holistic, or wellness, model defines health in terms of the whole person, not just in terms of diseased parts of the body or environmental condition. The **holistic model** encompasses the physiological, mental, emotional, social, spiritual, and environmental aspects of individuals and communities. It focuses on optimal health, prevention of disease, and positive mental and emotional states called *positive wellness*.

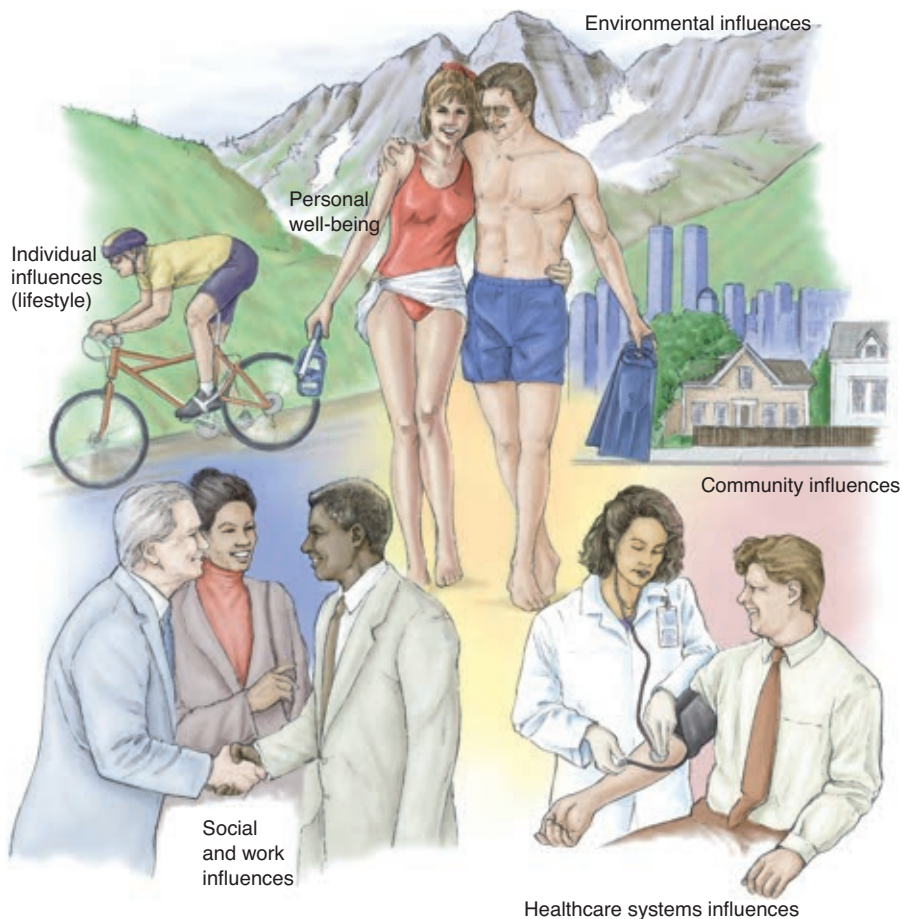
The holistic model emphasizes the unity of the mind, spirit, and body. Therefore, symptoms of illness and disease may be viewed as an imbalance in a person's total state of being and not simply as the malfunction of a particular part of the body. Consider, for example, a common



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A healthy lifestyle depends on exercise.





■ **Figure 1.2**

**Environmental Health Model**

This model takes into account all environmental factors that interact with one another to affect health.

You can observe a lot just by watching.

*Yogi Berra*

minor illness: the headache. About 80% to 90% of American adults experience at least one headache each year. Although a headache can be the result of brain injury or the symptom of another illness, more often it is caused by emotional stress that produces a tightening of the muscles in the head and neck. These contracting muscles increase the blood pressure in the head, thereby causing the pain of headache.

Most people try to relieve a headache by taking aspirin or some other analgesic drug that can alter the physiological mechanisms that produce the pain. In contrast, someone using the holistic approach would first try to determine the source of the tensions—worry, anger, or frustration—and then work to reduce or eliminate the tensions. Similarly, an upset stomach cannot be regarded as simply the result of excessive secretion of stomach acid, requiring an antacid to bring relief. In many cases, the upset results from unexpressed hostility or fear. You are probably aware that such common events as taking an examination or having a dispute with someone can cause uncomfortable feelings in the stomach.

**TERMS**

**environmental model:** modern analyses of ecosystems and environmental risks to health, such as socioeconomic status, education, and various environmental factors

**holistic model:** encompasses the physiological, mental, emotional, social, spiritual, and environmental aspects of health

**incidence:** the number of new cases of a particular disease

**morbidity:** the number of persons in a population who are ill

**mortality:** death rate; number of deaths per unit of population (e.g., per 100, 10,000, or 1,000,000) in a specific region, age range, or other group

**prevalence:** the number of people within a population with a particular disease

**vital statistics:** numerical data relating to birth, death, disease, marriage, and health



## Oh, My Aching Head!

Headaches are one of the most common causes of human discomfort. Although headaches can be a symptom of a brain disease or injury, the vast majority of headaches are caused by anxiety, tension, and emotional distress.

Tension headache is the most common type of headache. It is caused by persistent contractions of the muscles in the neck and scalp, brought on by anxiety, stress, or allergic reactions to drugs and foods. Tension headaches may last for hours, may occur frequently, and may be a problem over the course of several years. The pain of a tension headache often can be relieved by experiencing a few minutes of deep mental relaxation or by massaging the tense muscles in the neck and scalp.

Migraine headache, or vascular headache, is characterized by throbbing pain that can last for hours and even days.

Migraine headaches are accompanied by altered blood flow to the brain's blood vessels. They are treatable with medications. Also, massaging the neck and scalp can help relieve the pain, as can mental relaxation and visualizing normal blood flow to the head. Autosuggestion and visualizing the hands becoming warmer may also help relieve pain, because some blood flow is diverted from the brain to the hands, thereby reducing blood pressure in the brain.

Identifying and eliminating the sources of tension and anxiety in your life is the surest way to prevent headaches. Some people have learned to use "having a headache" as a means of avoiding unpleasant situations, such as school or work obligations. As children they may have observed their parents coping with tension and stress by "getting a headache," and so they too learned that "having a headache" can be used to avoid anxiety-provoking experiences. Have you developed such an avoidance mechanism?

The holistic approach emphasizes self-healing, the maintenance of health, and the prevention of illness, rather than solely the treatment of symptoms and disease. A holistic approach integrates medical technology into a broader treatment that looks not only at a person's symptoms, but also at the sources of disharmony. From the holistic point of view, illness is the result of some imbalance in the harmonious interaction of the body, mind, and environment. Thus, to the extent that we can follow a program of positive wellness and create a healthy environment, we can be free of disease.

Holistic health is not incompatible with the practice of conventional medicine. Rather, it emphasizes a view that has gained wide acceptance among members of the medical community—that each person has the capacity and the responsibility for optimizing his or her sense of well-being, for self-healing, and for the creation of conditions and feelings that help prevent disease. Holistic health is hardly a revolutionary idea; the Old English root of our word health (*hal*, meaning sound or whole) implies that there is more to health than freedom from sickness.

## Dimensions of Health and Wellness

Because wellness is dynamic and continuous, no dimension of wellness functions in isolation. When you have a high level of wellness or optimal health, all dimensions are integrated and functioning together. The person's environment (including work, school, family, community) and his or her physical, emotional, intellectual, occupational, spiritual, and social dimensions of wellness are in tune with one another to produce harmony.



## The Two-Minute Stress Reducer

Stressed out?

Be still.

And take a

D

E

E

P

Breath.

### Center Yourself

Focus your attention inward. Allow thoughts, ideas, and sensations to pass through your mind without reacting to any of them. You will notice them pass out of your mind, only to be replaced by new thoughts and sensations. Continue to breathe deeply and slowly and watch the passing of the thoughts that stress you.

### Empty Your Mind

Acknowledge that you have preconceived ideas and ingrained habits of perceiving. Know that you can empty your mind of distressing thoughts and replace them with ones that create inner harmony.

### Ground Yourself

Feel the sensation of your body touching the earth. Place your feet (or your bottom if you are sitting, or your entire body if you are lying down) firmly on the earth. Let your awareness come to your point of contact with the earth, and feel gravity connecting you to Mother Earth and stabilizing you.

### Connect

Allow yourself to feel your physical and spiritual connection with all living things. Remind yourself that with every breath you are reestablishing your connection with all of nature.





## Harmony and Peace

Many Native American cultures and tribes incorporate the idea of harmonious interactions with nature, animals, and other people in their religions.



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The first peace,  
which is the most important,  
is that which comes from  
within the souls of men when they  
realize their relationship,  
their oneness, with the universe  
and all its powers,  
and when they realize that  
at the center of the universe dwells  
Wakan-Tanka, and that  
this center is really everywhere,  
it is within each of us.  
This is the real peace, and the others are  
but reflections of this.  
The second peace is that which is  
made between two individuals,  
and the third is that  
which is made between two nations.  
But above all you should  
understand that there can never be peace  
between nations until there is  
first known that true peace which . . .  
is within the souls of men.

Black Elk  
The Sacred Pipe

However, health is more than a matter of individual choices. Family and other social relationships also influence a person's health. If a spouse has a serious illness, the chances that the marital partner will acquire a serious illness doubles (Strobe et al., 2007). If a couple has a child with a serious illness, the strain on the family can be enormous. Marital partners may ignore the well-being of other children, fight, and even divorce. Research suggests that as much as 25% of a person's health is a direct consequence of family interactions.

Health educators commonly refer to six dimensions of health and wellness: emotional, intellectual, spiritual, occupational, social, and physical:

- **Emotional wellness** requires understanding emotions and coping with problems that arise in everyday life.
- **Intellectual wellness** involves having a mind open to new ideas and concepts. If you are intellectually healthy, you seek new experiences and challenges.
- **Spiritual wellness** is the state of harmony with yourself and others. It is the ability to balance inner needs with the demands of the rest of the world.
- **Occupational wellness** is being able to enjoy what you are doing to earn a living and contribute to society, whether it be going to college or working as a

secretary, doctor, construction manager, or accountant. In a job, it means having skills such as critical thinking, problem solving, and communicating well.

- **Social wellness** refers to the ability to perform social roles effectively, comfortably, and without harming others.

### TERMS

**emotional wellness:** understanding emotions and knowing how to cope with problems that arise in everyday life, and how to manage stress

**intellectual wellness:** having a mind open to new ideas and concepts

**occupational wellness:** enjoyment of what you are doing to earn a living and contribute to society

**social wellness:** ability to perform social roles effectively, comfortably, and without harming others

**spiritual wellness:** state of balance and harmony with yourself and others



## Whole-Person Wellness

A person with emotional wellness is able to

- Maintain a sense of humor
- Recognize feelings and appropriately express them
- Strive to meet emotional needs
- Take responsibility for his or her behavior

A person with intellectual wellness is able to

- Communicate effectively in speaking and in writing
- See more than one side of an issue
- Keep abreast of global issues
- Exhibit good time-management skills

A person with spiritual wellness is able to

- Examine personal values and beliefs
- Search for meanings that help explain the purpose of life
- Have a clear understanding of right and wrong
- Appreciate natural forces in the universe

A person with occupational wellness is able to

- Feel a sense of accomplishment in his or her work
- Balance work and other aspects of life
- Find satisfaction in being creative and innovative
- Seek challenges at work

A person with social wellness is able to

- Develop positive relationships with loved ones
- Develop relationships with friends
- Enjoy being with others
- Effectively communicate with others who may be different

A person with physical wellness is able to

- Exercise regularly and select a well-balanced diet
- Participate in safe, responsible sexual behavior
- Make informed choices about medicinal use and medical care
- Maintain a positive, health-promoting lifestyle

- **Physical wellness** is a healthy body maintained by eating right, exercising regularly, avoiding harmful habits, making informed and responsible decisions about health, seeking medical care when needed, and participating in activities that help prevent illness.

common belief that the environment will have to be changed, and personal ways of living also have to be transformed, and radically.

Unfortunately, in the years since Dr. Thomas's pronouncement, the radical transformation he envisioned has yet to occur as pollution and unhealthy lifestyles

## Taking Responsibility for Your Health

Not so many years ago, North Americans were subject to a variety of diseases over which they had little or no control. In the early part of the twentieth century, infectious diseases were the leading causes of death because modern public health methods and modern drugs, such as antibiotics, were not available. In 1918, millions of people around the world died from influenza, the cause of which was unknown at that time, but is now known to be caused by a virus.

Today, the leading causes of illness and death in the United States and much of the industrialized world are not due to infections, but to “lifestyle diseases” (Table 1.1). These diseases, such as heart disease and cancer, mostly result from people's behaviors and the ways in which they live. The idea that lifestyle is a major cause of disease and death in modern societies is not new. A generation ago, Lewis Thomas (1978), an eminent physician and author, observed that our lifestyles were killing us.

The new theory is that most of today's human illnesses, the infectious ones aside, are multifactorial in nature, caused by two great arrays of causative mechanisms: the influence of things in the environment; and one's personal lifestyle. For medicine to become effective in dealing with such disease, it has become

**Table 1.1**

**Ten Leading Causes of Death for All Ages, All Races, and Both Sexes, 1900, 1987, and 2010**

1900	1987	2010
1. Tuberculosis	Heart disease	Heart disease
2. Pneumonia	Cancer	Cancer
3. Diarrhea and enteritis	Stroke	Chronic lower respiratory diseases (e.g., emphysema/bronchitis)
4. Heart disease	Injuries	Stroke/disease of brain blood vessels
5. Liver disease	Bronchitis and emphysema	Accidents
6. Injuries	Pneumonia and influenza	Alzheimer's disease
7. Stroke	Diabetes	Diabetes (mostly type 2)
8. Cancer	Suicide	Kidney disease
9. Bronchitis	Chronic liver disease	Flu and pneumonia
10. Diphtheria	Arteriosclerosis	Suicide

Source: Data from Centers for Disease Control and Prevention, National Center for Health Statistics, *U.S. National Vital Statistics Reports*, 60 (4) January 11, 2012.

continue to cause health problems. Continued massive burning of fossil fuels has ushered in global warming, discarded plastic litters the land and oceans, and air pollution from burning fossil fuels is rampant (see Chapter 24). Heart disease is still the top cause of death, cigarette smoking is still increasing worldwide, and the prevalence of overweight and type 2 diabetes is increasing rapidly (see Chapter 6).

Heart disease results primarily from today's lifestyles, which include overweight (see Chapter 6), cigarette smoking (see Chapter 17), lack of exercise (see Chapter 7), high levels of stress (see Chapter 3), and high blood pressure and high levels of blood cholesterol (see Chapter 14). Cancer is associated with both nutritional (see Chapter 5) and environmental factors (see Chapter 13). Poor nutrition, smoking cigarettes, and exposure to hazardous substances in the environment initiate biological changes that can result in cancer. An unhealthy lifestyle is also at the root of many instances of lung disease (from cigarette smoking) and type 2 diabetes and kidney disease (from overweight), and some instances of suicide and accidents (from stress or drug and alcohol use).

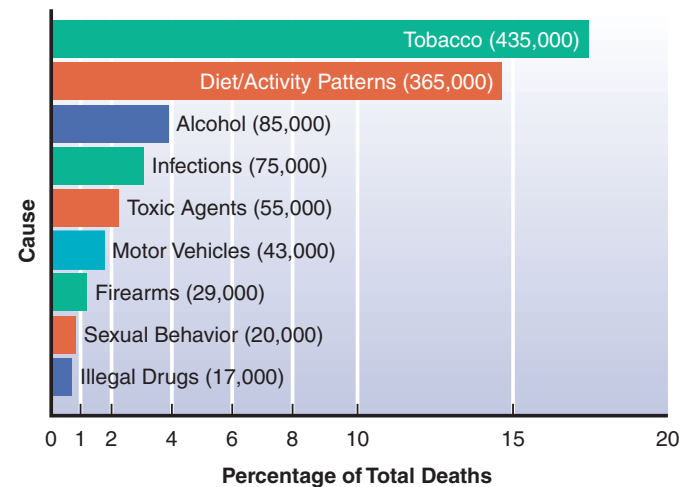
A major characteristic of many lifestyle diseases is that they are **chronic diseases** that persist for years or life. Chronic diseases lower the quality of life of the affected person and usually shorten the life span. A chronic disease also tends to affect a patient's family and is costly to the healthcare system (U.S. Centers for Disease Control and Prevention, 2008).

## Lifestyle and Health

When a person dies, the cause of death is generally identified in terms of the organ system(s) that failed and resulted in the person's death, for example, heart disease,

cirrhosis of the liver, cancer of the lung. This may not, however, identify the root causes of that death. For example, saying someone died of lung cancer does not tell us that the actual cause of death was smoking. When deaths are examined for their actual causes and not simply what is reported on death certificates, the results show that approximately half of the 2.4 million deaths in the United States each year are due to lifestyle factors (**Figure 1.3**) and, by extension, that many, many deaths could be prevented if people lived more healthfully.

Leading the list of life-shortening behaviors is tobacco use, which is responsible for more than 435,000 American deaths per year. Smoking cigarettes and cigars, chewing tobacco, and being exposed to second-hand smoke contribute substantially to deaths caused by cancer of all kinds, heart disease, high blood pressure, stroke, bronchitis, chronic obstructive pulmonary disease (COPD), pneumonia, low birth weight, and burns from fires. The enormous toll on life and health exacted



**Figure 1.3**

### Number of Preventable Deaths in the United States in 2000

Estimates are from data including actual numbers (firearm deaths) and calculated risks (tobacco deaths). More than 1 million deaths are caused by lifestyles and behaviors—all preventable deaths.

Source: Data from A. H. Mokdad, et al. (2004). Actual causes of death in the United States, 2000. *Journal of the American Medical Association*, 291, 1238–1243.



Many alternative medical practices, such as chiropractic, massage, and acupuncture, are now considered legitimate medical treatments and are often covered by insurance.

## TERMS

**chronic disease:** a disease that persists for years or even a lifetime

**physical wellness:** maintaining a healthy body by eating right, exercising regularly, avoiding harmful habits, and making informed, responsible decisions about your health





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Photographed by Christine McKen.



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Simple behaviors in our everyday lives can positively affect health: Eat five servings of fruits and vegetables every day, read food labels to make wise choices, and walk instead of drive whenever possible.

by tobacco use is the reason that health agencies, doctors, and governments overwhelmingly recommend limiting tobacco use.

Next to tobacco use, unhealthy diet and activity patterns contribute the most to death in the United States. Consumption of high levels of cholesterol and saturated fat in foods is associated with heart disease, several types of cancer, and stroke. High-calorie consumption coupled with low levels of physical activity predisposes people to overweight, diabetes, and high blood pressure. A sedentary lifestyle is responsible for 23% of deaths from the leading chronic diseases (heart disease, high blood pressure, stroke, and diabetes).

Alcohol abuse accounts for nearly 85,000 deaths each year from alcohol toxicity, motor vehicle and other types of accidents, and homicides. In contrast, only 20,000 deaths annually are attributable to the use of illegal drugs. Unsafe sex and injection drug use contribute to thousands of new cases of AIDS each year. Transmission of hepatitis B and C viruses results in thousands of cases of liver disease. Overuse of antibiotics has produced bacterial strains that are resistant to antibiotics, resulting in infections that are difficult to treat.

Environmental factors also cause fatalities. For example, exposure to toxic agents in the workplace and elsewhere accounts for more than 50,000 deaths per year. Firearms used in homicides, suicides, and accidental shootings are responsible for 29,000 deaths. Motor vehicle accidents cause nearly 43,000 deaths. Lack of access to medical care—which affects the 47 million American families who have no health insurance—contributes to thousands of deaths each year as well.

## Type 2 Diabetes as a Lifestyle Disease

Diabetes is a disease in which the amount of sugar in the blood increases to unhealthy levels as a result of malfunctions in the body's sugar-regulating system. Diabetes can cause blindness, blood vessel problems, kidney failure, heart damage, and death. There are two forms of diabetes:

**Type 1 (insulin-dependent).** The pancreas (a digestive organ) is diseased and is unable to manufacture the hormone insulin, which regulates the level of sugar in the blood. Medical treatment involves frequent injections of insulin.

**Type 2 (non-insulin-dependent).** Too much fat in the blood (generally from being overweight) causes body cells to resist the actions of insulin (insulin resistance). This causes blood levels of sugar to rise. Over time, insulin-producing cells in the pancreas become damaged and produce less insulin. Treatment includes increasing exercise, decreasing the consumption of calories to produce weight (fat) loss, and possibly injections of insulin or drugs that decrease insulin resistance.

Evidence that type 2 diabetes is a disease of lifestyle comes from studies of populations that have dramatically altered their lifestyle over a brief time span. For example, Yemenite Jews who emigrated to Israel in 1949 had one of the lowest rates of type 2 diabetes in the world—less than 1 case per 1,000 individuals. Thirty years later, the same population, now adapted to a Western lifestyle in Israel, had a rate of almost 12 cases of type 2 diabetes per 1,000 individuals.



## Large Corporations Profit from Products That Make People Sick

Heart disease, stroke, lung cancer, colon cancer, type 2 diabetes, and chronic obstructive pulmonary disease account for nearly half of all deaths in the United States. These diseases are caused in large part by unhealthy lifestyle choices: eating poorly, smoking cigarettes, being overweight, and not exercising. Unfortunately, many large corporations profit from individuals' unhealthy lifestyles—indeed, some encourage unhealthy behavior as the basis of their business.

The tobacco industry is the prime example of companies profiting financially from harming others. No other industry makes a product that, when used as directed, causes disease and death. In the late 1990s, the major tobacco companies were sued by the federal government, state governments, and individuals for lying to the public for nearly 50 years about the addictive properties of their products and the harm that tobacco use causes. Knowing that long-term smokers (i.e., their best customers) tend to begin smoking as teens, the tobacco industry uses sophisticated marketing methods to lure young people to smoke and to get them hooked. The tobacco industry is a friend to no one.

Whereas it is not as obvious as with tobacco, some food companies—particularly fast-food companies—also profit from harming their customers. A typical serving of fast food (e.g., burger, fries, and a soft drink or shake) contains around 1,000 calories. Approximately one-third to one-half of those calories are from fat, a prime contributor to heart and blood vessel disease. Fast food also contains large amounts of cholesterol and salt, which also contribute to heart and blood vessel disease. Studies show that the blood vessels of young people who consume typical fast foods show the beginning stages of blood vessel disease, with the degree of damage proportional to the amount of fast food consumed. Moreover, the calories in a typical serving of fast food provide about half or more of most individuals' energy requirement for one day. This is why a steady diet of fast food can lead to weight problems and associated illnesses like type 2 diabetes.

Some fast-food companies have been legally challenged for causing disease. But you need not wait for legal challenges to be a healthy person. You can become aware that in some instances the quest for corporate profits is based on encouraging people to adopt unhealthy living habits, and you can choose a healthier way to live.

Another example is the prevalence of type 2 diabetes among the Pima Indians of the southwestern United States. Traditionally, these Native Americans lived mostly on maize, beans, wild game, and vegetables. They were active, lean, and strong. Because forced relocation removed them from their traditional environment, today many Pimas have adopted living habits characteristic of most Americans, and hence many are overweight and about 40% have type 2 diabetes, the highest incidence of type 2 diabetes in the world. That the prevalence of type 2 diabetes among Pima Indians living in Mexico is approximately 6% indicates that the disease is determined mostly by environmental circumstances and not by genetics (Schulz et al., 2006).

Type 2 diabetes is an increasingly prevalent lifestyle disease. Currently, about 26 million Americans are affected and millions more have prediabetes, a risk factor for developing diabetes in 10 years. Diabetes is strongly associated with being overweight: For every 20% increase in weight gain, the chance of diabetes doubles. As a consequence of the epidemic of overweight and obesity in the United States, diabetes has become a major health problem. For Americans born in 2000, the average lifetime risk of developing diabetes is 32.8% for men and 38.5% for women (Narayan et al., 2003). The consequences of developing diabetes in midlife are substantial. For example, if diagnosed with diabetes at age 40, men will die 11.6 years prematurely and women will die 14.3 years prematurely.

Diabetes is a problem not only in the United States but also around the world. In 2000, the global number of people with diabetes was about 171 million (2.5% of the world's population). In 2007, it was estimated that 246 million people worldwide had diabetes (about 7.3% of the world's population). In the years to come, as less developed countries develop economically and their populations adopt the dietary and physical activity patterns of the most developed countries, by the year 2025 the number of people with diabetes is expected to increase to 366 million (World Health Organization, 2011).

Research has conclusively shown that eating healthfully and regularly engaging in a moderate physical activity can reverse and prevent type 2 diabetes (Schwarz et al., 2008). This is the reason that everyone is encouraged to learn more about healthy eating and the value of moderate physical activity.

Whereas each individual is responsible for her or his lifestyle decisions, scientists and health professionals know that many lifestyle diseases, including type 2 diabetes, require community-wide efforts to help individuals make healthy choices (Katz, 2009). For example, institutions can insist that vending machines contain healthy foods instead of junk food. Stairwells can be made visually attractive and have music or video to encourage walking instead of riding elevators. Municipalities can ensure that subdivisions have sidewalks and many parks. Rather than being at a centralized location, food service can be

located at the periphery of large institutions to encourage walking.

Many health insurers and employers have begun to offer financial incentives to employees to make healthy changes in their lifestyles. Some companies give employees time off to exercise during work hours and financial rewards for losing weight. Some companies also penalize and even fire employees who violate no-smoking rules. In a 2008 poll, 91% of American employers believed that they could reduce their healthcare costs by getting employees to adopt healthier lifestyles (Mello & Rosenthal, 2008).

### Nearsightedness

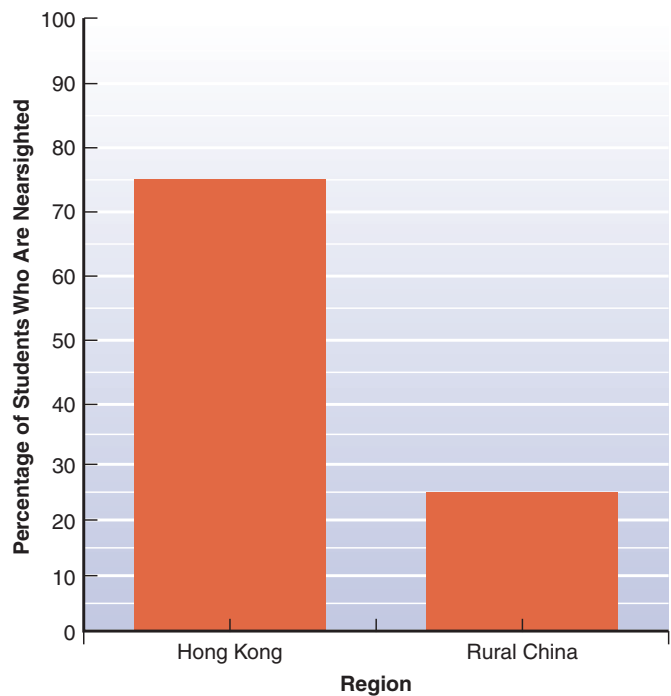
Another dramatic example of how modern lifestyles affect health concerns vision. Many children and a majority of adults in modern societies wear glasses or contact lenses to correct for nearsightedness (myopia). When our ancestors had to forage and hunt for food, acute vision was probably essential to survival and, of course, corrective lenses were unknown. During early development, a child's eye adapts to the visual information the eyes receive from the environment. Looking at distant objects tends to produce normal vision or eyes that are slightly farsighted. Today, almost all children watch TV and computer screens for many hours a day and also read books, magazines, and newspapers—all of which require close-up vision. These activities tend to cause myopia in many children.

The influence of modern lifestyles on vision was documented by measuring the vision of young people in rural China compared with the vision of Chinese students in Hong Kong (Wallman, 1994). Most of the young people in the rural environment had normal vision or were slightly farsighted (**Figure 1.4**). In contrast, most of the Chinese students in Hong Kong were nearsighted, many to a considerable degree. Thus, if one considers 20/20 vision desirable, our modern lifestyle, which involves much close-up vision, is likely to affect eye development and may produce myopia. Until we understand more about the environmental and genetic cues that affect visual development, children should be encouraged to spend time outdoors, where their eyes are more likely to focus on distant objects.

## Healthy People 2020

Each decade, the U.S. government issues health objectives for the nation, the latest of which is Healthy People 2020 (Office of Disease Prevention and Health Promotion, 2010). The main goals of Healthy People 2020 are (1) to help individuals of all ages live longer and improve their quality of life, and (2) to eliminate health disparities among segments of the U.S. population, including differences by gender, race or ethnicity, education or income, disability, geographic location, or sexual orientation.

To foster the health of the diverse American population, Healthy People 2020 recognizes that families,



**Figure 1.4**

Comparison of visual acuity of 18- to 28-year-old students in Hong Kong with youths in rural areas of China. Most of the rural youths have normal vision, whereas most of the Hong Kong students are myopic.

Source: Data from J. Wallman (1994). Nature and nurture of myopia. *Nature*, 371, 201–202.

schools, worksites, communities, states, and national organizations must help individuals live healthfully. This means that not only are individuals asked to make healthy lifestyle choices based on sound health knowledge, but also that communities strive to provide quality education, housing, and transportation; health-promoting social and physical environments; and access to quality medical care. For example, informing people that it is healthy to consume five servings of fresh fruits and vegetables each day is insufficient if their community does not have stores or other sources of healthy food. Also, advising people to walk more is insufficient if their communities are not safe or lack parks or sidewalks.

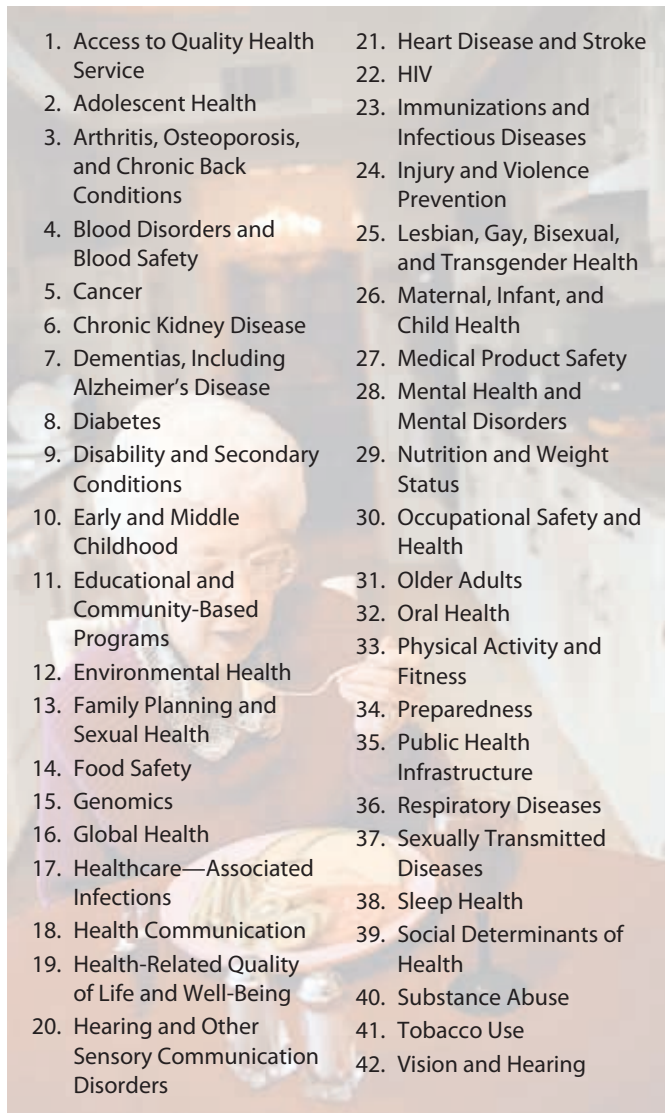
Healthy People 2020 consists of nearly 1,500 specific health objectives grouped into 42 topic areas (**Figure 1.5**) each with a specific goal. Examples of specific goals are the following:

- **Cancer:** reduce the number of new cancer cases as well as the illness, disability, and death caused by cancer.
- **Disability and Secondary Conditions:** promote the health of people with disabilities, prevent secondary condi-

The only way to keep your health is to eat what you don't want, drink what you don't like, and do what you'd rather not.

Mark Twain





© Skye Hall/Photodisc/Getty Images

■ Figure 1.5

**Topic Areas for Healthy People 2020**

Source: Modified from U.S. Department of Health and Human Services. Office of Disease Prevention and Health Promotion. Healthy People 2020. Washington, DC. Available at <http://healthypeople.gov/2020/topicsobjectives2020/default.aspx>.

tions, and eliminate disparities between people with and without disabilities in the U.S. population.

- **Food Safety:** reduce foodborne illnesses.

Several of the goals in Healthy People 2020 are grouped into 7 categories, called **Foundation Health Status**, which reflect the major health concerns in the United States (Figure 1.6). Foundation Health Status is intended to help everyone more easily understand the overall health of the U.S. population and the most important changes required to improve individual health and the health of families and communities. Each of the categories depends to some extent on the following factors:

- The information people have about their health and how to make improvements
- Choices people make (behavioral factors)

**1. Life Expectancy (With International Comparison).** The average number of years individual Americans would be expected to live, measured from birth and at age 65, compared to peer Organization for Economic Cooperation and Development (OECD) countries

**2. Healthy Life Expectancy.** The expected years of life in good or better health, years of life free of limitation of activity, and years of life free of selected chronic diseases

**3. Years of Potential Life Lost (With International Comparison).** The degree of premature death, that is, the total number of years not lived by people who die before reaching a given age, compared to 31 OECD countries and determined for both sexes by cause of death

**4. Physically and Mentally Unhealthy Days.** The number of days in the past 30 days that individuals rated their physical or mental health as not good

**5. Self-Assessed Health Status.** How an individual perceives his or her health, rating it as excellent, very good, good, fair, or poor

**6. Limitation of Activity.** The long-term reduction in a person's ability to do his or her usual activities caused by physical, mental, or emotional problems and assessed by asking people about their limitations in activities of daily living (such as bathing/showering, dressing, eating, getting into and out of bed, walking, using the toilet); instrumental activities of daily living (such as using the telephone, doing light housework, doing heavy housework, preparing meals, shopping for personal items, managing money); play, school, or work; and remembering

**7. Chronic Disease Prevalence.** The number of Americans with one or more of the following chronic diseases: cardiovascular disease, arthritis, diabetes, asthma, cancer, and chronic obstructive pulmonary disease (COPD)

© Kimham/Shutterstock, Inc.

■ Figure 1.6

**Healthy People 2020 Foundation Health Status**

Source: Modified from U.S. Department of Health and Human Services. Office of Disease Prevention and Health Promotion. Healthy People 2020. Washington, DC. Available at <http://healthypeople.gov/2020/about/GenHealthAbout.aspx>.

- Where and how people live (environmental, economic, and social conditions)
- The type, amount, and quality of health care people receive (access to health care and characteristics of the healthcare system)

The overarching goal of Healthy People 2020 is to help individuals be as healthy and well as possible. Healthy People 2020 encourages individuals, families, communities, schools, and places of employment to promote the

**TERMS**

**Foundation Health Status:** seven categories of health goals that represent the major public health concerns in the United States

health of everyone. To support attaining the goal of health and well-being for everyone, the 2010 Federal Affordable Health Care Act places considerable focus on disease prevention and improving public health (Koh & Sebelius, 2010). The act calls for increased insurance coverage of preventive services such as vaccinations, disease screening, and individual wellness/disease prevention including smoking cessation and obesity prevention. The law also helps employers and communities institute and strengthen employee wellness programs.

## Health Issues of College Students

About 16 million people attend U.S. colleges and universities. About half are “traditional” students, those who enrolled in college directly from high school; others are “nontraditional students,” those who enrolled in college after having devoted months or years to working, military service, traveling, and/or raising a family. Some health issues, such as time pressures and academic and financial stress, can affect students of any age (Table 1.2). Other health issues, such as the risk of acquiring a sexually transmitted disease (STD), may be more pertinent to students within a certain age group. Some typical health issues for college students include the following:

**Mental health.** Students are exposed to a variety of stressors and pressures that can impair their mental health. Academic overload, tests, and competition can create feelings of insecurity, anxiety, inferiority, and depression. Traditional students may be lonely and have difficulty adjusting to early adulthood. Nontraditional students may feel isolated and without social support. Stress can impair sleep and lead to depression.

**Food and weight.** Time pressures and the easy availability of junk food cause many to consume lots of sugar (candy, sodas) and fat (fast food) and

insufficient amounts of fruits and vegetables. Students may use food as a way to cope with stress and uncomfortable emotions. Many students are overly concerned about their body size and shape to meet social expectations of attractiveness, causing some to develop eating disorders. Because more than half of North American adults are overweight, weight control is an issue for many students.

**Health care.** A large proportion of U.S. college students has limited access to health care because their colleges do not have comprehensive services and they are without health insurance.

**Substance use and abuse.** Many students use tobacco, alcohol, and other drugs to cope with stress and unpleasant feelings or to fit in socially. Alcohol abuse is related to sexual assault and date rape, unintended pregnancies (from not using contraceptives properly or at all), and acquiring an STD (from not practicing safer sex).

**Sexual and relationship health.** Sexually active students of any age are at risk for acquiring an STD, becoming unintentionally pregnant, or becoming involved in sexual assault, especially acquaintance or date rape. Sexual activity to relieve academic stress, increase self-esteem, gain peer acceptance, or relieve loneliness can be mentally and spiritually damaging. Married students may find that the time and energy demands of college work create stress in their marital relationships.

**Accidents and injuries.** Many students commute to school, often rushing to and from work and home, and hence are at risk for automobile accidents. Alcohol-using students are at risk for auto and other kinds of accidents. Athletically active students are at risk for sports injuries.

Also, a variety of environmental and social forces present barriers to healthful living. For example, someone may want to become more physically active to manage stress or weight, and to reduce the risks of heart disease and cancer. However, that person may live in a car-dependent community where work, school, and services are located miles away and where there are no sidewalks, bike lanes, or nearby parks.

**Table 1.2**

### Health Impediments to Academic Performance Reported by American College Students

Health issue	Percentage reporting
Stress	25
Sleep difficulties	17
Anxiety	16
Cold/flu/sore throat	14
Depression	10
Relationship difficulties	10
Upper respiratory infection	5
Alcohol use	4
Allergies	3

Source: Data from World Health Organization (2011). Global status report on noncommunicable diseases. Available at: [http://www.who.int/chp/ncd\\_global\\_status\\_report/en/index.html](http://www.who.int/chp/ncd_global_status_report/en/index.html).

## Making Healthy Changes

A major assumption of health education is that nearly everyone has a basic desire to be healthy and well, but that many people acquire habits of thought and behavior that may make them less well rather than more. One goal of health education, therefore, is to provide knowledge and information to people so they can develop healthful attitudes and skills. With healthful attitudes and skills, it is reasoned, people will adopt healthy behaviors because they naturally want to do what is best for themselves.

It is said that knowledge is power, but with regard to living healthfully, that isn't always the case. Almost

If you find yourself in a hole, stop digging.

*Will Rogers*

everyone knows that smoking cigarettes, driving after drinking alcohol, and eating junk food are unhealthy, but many people do those

things anyway. Simply knowing what to do is no guarantee that a person will do it. One reason for this is that an unhealthy attitude or behavior is rewarding in some way, even if it is harmful in some other way (for example, smoking cigarettes to relieve stress). To change a health behavior, a person must believe that the benefits of change outweigh the costs and that she or he is capable of making the desired change. Rituals such as New Year's resolutions and slogans such as "just do it" offer unrealistic models of how habits are changed. Desire and willpower alone are insufficient; research, planning, and enlisting social support are required as well. Following are three models that describe the process of health behavior change.

### The Health Belief Model

The Health Belief Model (HBM) was originally developed as a systematic method to explain and predict preventive health behavior, but it has been revised to include general health motivation for the purpose of distinguishing illness and sick-role behavior from healthy behavior. Key aspects of the model are described as follows:

- **Perceived susceptibility.** Each individual has his or her own perception of the likelihood of experiencing a condition that would adversely affect his or her health. Individuals vary widely in their perception of susceptibility to a disease or condition. Those at one end deny the possibility of contracting an adverse condition. Individuals in the middle admit to a statistical possibility of disease susceptibility. Individuals at the high end of susceptibility feel there is real danger that they will experience an adverse condition or contract a given disease.
- **Perceived seriousness.** Perceived seriousness refers to the beliefs a person holds concerning the effects of a given disease or condition on his or her state of affairs. These effects can be considered from the point of view of the differences that a disease would create—for instance, pain and discomfort, loss of work time, financial burdens, difficulties with family, problems with relationships, and susceptibility to future conditions. It is important to include these emotional and financial burdens when considering the seriousness of a disease or condition.
- **Perceived benefits of taking action.** Taking action toward the prevention of disease or toward dealing with an illness is the next step after an individual has accepted the susceptibility to a disease and recognized its seriousness. The action a person chooses will be influenced by his or her beliefs regarding the benefits of the action.

- **Barriers to taking action.** Action may not take place even though an individual may believe that the benefits to taking action are significant. This may be because of barriers, which can include inconvenience, cost, unpleasantness, pain, or upset. These characteristics may lead a person away from taking the desired action.
- **Cues to action.** An individual's perception of the levels of susceptibility and seriousness provides the force to act. Benefits, minus barriers, provide the path of action. However, "cues to action" may be required for the desired behavior to occur. These cues to action may be internal or external.

### The Transtheoretical Model

One of the most influential models of health behavior change is the Transtheoretical Model, or Process of Change Model (Prochaska, DiClemente, & Norcross, 1992). This model recognizes that change occurs through the following stages:

- **Precontemplation.** The person is not considering changing a particular behavior any time in the foreseeable future. Many individuals in this stage are unaware or underaware of their problems. Information is important during this stage.
- **Contemplation.** The person becomes aware that change is desirable but has not committed to act. The person often focuses on why it would be difficult to change. Information on options on how to change the behavior can be helpful during this stage.
- **Preparation.** The person desires change and commits to making that change in the near future, usually within the next 30 days. Instead of thinking why he or she can't take action, the focus is on what can be done to begin. The person creates a realistic plan for making a change, including overcoming obstacles. This stage may include announcing the change to friends and family, researching how to make the change, making a calendar, or setting up a diary or journal to record progress and obstacles to progress.
- **Action.** The person implements the plan. The old behavior and the environmental situations that reinforced that behavior are stopped and new behaviors and environmental supports are adopted. Obstacles are expected and noted, and strategies for overcoming them are implemented. Progress through this stage may take six months or more.
- **Maintenance.** The person strengthens the change, recognizing that lapses and even temptations to give up will occur. "Ebb and flow" are to be expected and are not to be seen as failures. The person can remind himself or herself of the many benefits of and gains from the behavior change to help combat relapse.
- **Termination.** The person is not tempted to return to the previous behavior.





## Chronic Diseases in Rich and Poor Countries: The Causes Differ

Chronic diseases are the leading causes of death throughout the world. Besides causing death, chronic diseases reduce the quality of life of affected individuals, often for many years. Four chronic diseases—heart disease, cancer, respiratory disease, and type 2 diabetes—account for over 40 million deaths per year worldwide (World Health Organization, 2011). By 2025, the number of deaths worldwide from those four chronic diseases is expected to increase to nearly 50 million annually.

In economically developed countries, such as Japan, the United States, Australia, and most of Europe, nearly 50% of the chronic disease burden is associated with five risk factors: tobacco use, high blood pressure, alcohol use, high cholesterol, and overweight (Table 1.3). On the other hand, in the least economically developed countries, deaths from chronic disease result from different risk factors: underweight, unsafe sex (causing HIV/AIDS), unsafe water and sanitation, and indoor smoke from cooking. As poor countries develop economically, the risk factors for chronic disease resemble those of developed countries.

Recognizing that heart disease, cancer, respiratory disease, and type 2 diabetes are largely preventable, international health organizations are searching for ways to stem the rising tide of chronic disease in developing countries. Not only

is there a desire to offer people an improved quality of life, but also there is the recognition that economic development is slowed or stalled when a country carries a large burden of disease. The more a poor country's meager financial resources are used to deal with an increasing number of people with chronic diseases, the less money there is to build schools, roads, electricity generating plants, and other infrastructure. To the degree that disease retards economic advancement, it contributes to poverty and its discontents, including terrorism born of frustration.

To reduce the burden of chronic disease in developing countries, individuals must be encouraged and taught how to live more healthfully. Moreover, governments will need to regulate transnational economic activities that can negatively affect the public health. For example, to limit the damage caused by tobacco smoking, in 2003, the World Health Organization sponsored the Framework Treaty on Tobacco Control, agreed to by 168 countries, which includes a comprehensive ban on all tobacco advertising, promotion, and sponsorship, elimination of illicit trade in tobacco products, banning of tobacco sales to and by minors, agricultural diversification and the promotion of alternative livelihoods, and an increase in taxes on tobacco products to discourage consumption. Similar efforts will be required to limit consumption of sugar, fat, and cholesterol and thereby reduce the burdens of heart disease, high blood pressure, type 2 diabetes, and overweight (Yach et al., 2004).

**Table 1.3**

### Percentage of Deaths from Chronic Disease Risk Factors in Developed and Developing Countries

Risk factor	Developed countries (1.4 billion people)	Developing countries (2.4 billion people)	Least developed countries (2.3 billion people)
Tobacco use	12.2	4.0	2.0
High blood pressure	10.9	5.0	2.5
Alcohol use	9.2	6.2	***
High cholesterol	7.6	2.1	1.9
Overweight	7.4	2.7	***
Low fruit and vegetable consumption	3.9	1.9	***
Physical inactivity	3.3	***	***
Underweight	***	3.1	14.9
Unsafe water, sanitation, hygiene	***	1.7	5.5
Unsafe sex	10.2	***	0.8
Indoor smoke	***	1.9	3.9

Developed countries include the United States, Japan, and Australia.

Developing countries include China, Brazil, and Thailand.

Least developed countries include India, Mali, and Nigeria.

\*\*\*Indicates a low percentage of deaths.

Source: Adapted from D. Yach et al. (2004). The global burden of chronic diseases. *Journal of the American Medical Association*, 291, 2616–2622.

## The Theory of Reasoned Action/Theory of Planned Behavior

The Theory of Reasoned Action/Theory of Planned Behavior posits that changing a health behavior begins with an intention to adopt a new behavior (e.g., stop smoking). The intention is a combination of a positive attitude about performing the behavior (e.g., “not smoking is good”) and the person’s thoughts about how others will respond to the behavior (e.g., “my girlfriend will be happy if I stop”). Furthermore, change is affected by the person’s perceptions of how much control the person has over successfully bringing about the desired change (e.g., “I can do this if I get some support”).

### It Starts with You

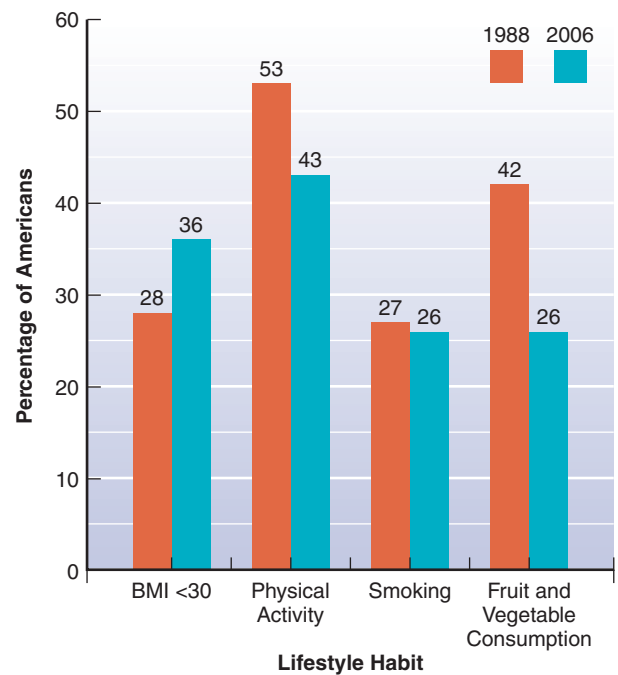
Being healthy and well starts with you. The medical care system—doctors and other medical providers, pharmaceutical companies, hospitals, clinics, insurance companies, and to some degree the government—can help you when you are sick. However, only you can make life goals to be healthy and well; to take responsibility for the ways that your thoughts, feelings, and behaviors affect your life; to care for rather than harm yourself; and to choose to learn and adopt health-promoting behaviors, and contribute to the development and maintenance of a health-promoting culture.

Scientists at the University of California at Berkeley undertook a multiyear study to determine, among other things, behaviors that contribute to health and longevity. Their findings include the following:

- No smoking
- Getting seven to eight hours of sleep per night
- Maintaining body weight not less than 10% and not more than 30% of recommended for height and body frame
- Regular exercise
- Little or no alcohol consumption
- Eating breakfast regularly
- Little between-meal snacking

Much research shows that four lifestyle practices can reduce the risk of many chronic diseases (Ford et al., 2009). The four lifestyle factors are not smoking, maintaining body weight (body mass index of 30 or less), performing about 3.5 hours of physical activity per week (30–45 minutes per day), and consuming a diet containing at least five servings of fruits and vegetables per day, whole-grain bread, and little meat. Unfortunately, the trend in the United States over the past 20 years has been toward living less healthfully rather than more (Figure 1.7).

It is clear from many kinds of health research that each one of us needs to do more to maintain and improve our health. When one is young, thinking about health is the last thing one is interested in doing. We (the authors) certainly did not worry about our health when we were teenagers or even in college. Moreover, 50 years ago, eating as much meat as you could afford, smoking cigarettes, and getting drunk were generally accepted behaviors. When



**Figure 1.7**

The percentage of U.S. adults with healthful lifestyle habits decreased between 1988 and 2006. The lifestyle habits are body mass index less than 30, participating in physical activity 12 times per month, smoking cigarettes, and consuming five servings of fruits and vegetables per day.

Source: Adapted from D. E. King et al. (2009). Adherence to healthy lifestyle habits in US adults, 1988–2006. *American Journal of Medicine*, 122, 493–494.

you are 20 years old, thinking about being 60 or 70 years old is unimaginable. Unlike 50 years ago, we now know that protecting health is something that has to begin while you are young. Making lifestyle changes when you already are old (and presumably wiser) is mostly too late.

Health is similar to retirement: It is something you have to plan for and pay attention to while you are young. For example, putting away just a few dollars every month adds up to an enormous sum in 50 years, but most of us never think about doing it. The same holds true for health. Making small, positive changes in your health and lifestyle now will pay enormous dividends in the future.



### Reduce Stress When Sitting in Front of a Computer

If you sit at a computer for more than 30 minutes at a time, remember to stand up and stretch the muscles of your neck, shoulders, and back. Do stretches for at least 5 minutes to avoid headaches, fatigue, and muscle cramps. Studies show that virtually everyone raises and hunches their shoulders as soon as they sit down at a computer. About one-third start breathing shallowly. The American Institute of Stress recommends practicing slow, deep breathing while using a computer.

## Critical Thinking About Health

1. As pointed out in this chapter, the major health issues of college students are sexual health, mental health, substance abuse, weight, accidents and injuries, and health care. Discuss which of these issues is of most concern to you personally. Explain your reasons and worries. How can you deal with your concerns in a way that will improve your health?
2. Describe one lifestyle behavior you routinely engage in that you regard as harmful to your health (smoking, for example). Discuss your reasons for continuing to engage in this unhealthy behavior. Consider what you might do to change this behavior and list the steps you would take to accomplish the healthy change. Do you believe that you can make the healthy change?
3. What is the significance to American society of the data in Figure 1.3?
4. Imagine that you are the Surgeon General of the United States, who formulates national health policy. (A former surgeon general, C. Everett Koop, formulated the crusade against tobacco smoking a generation ago.) Describe what you believe is the primary health problem in the United States today. Justify your choice with as many facts as you can find. Describe the steps you believe should be taken by government, private companies, organizations, and individuals to eradicate this health problem.

## Health in Review

- Health is not only the absence of disease but also living in harmony with oneself, friends and relatives, and social and physical environments.
- Health means being responsible for preventing personal illness and injuries as well as knowing when to seek medical help.
- Three models used to describe health are medical, environmental, and holistic, or wellness.
- A holistic approach to health emphasizes prevention of disease and injury and self-responsibility for nutrition, exercise, and other aspects of lifestyle that promote wellness.
- The dimensions of wellness are emotional, intellectual, spiritual, occupational, social, and physical.
- Many illnesses (e.g., diabetes, heart disease, cancer) are “lifestyle diseases,” that is, primarily attributable to unhealthy living habits. Taking responsibility for your health while you are young is the best way to reduce the risk of chronic disease later in life.
- Unhealthy lifestyles and behaviors are responsible for half of all deaths in the United States each year.
- Healthy People 2020 is a set of national health objectives characterized by enhancing the quality of life, reducing the incidence of preventable diseases and premature deaths, and reducing disparity in health status among different demographic groups.
- Changing health behaviors requires knowledge, planning, and social support.

## Health and Wellness Online

The Web contains a wealth of information about health and wellness. You can gain a new perspective on many topics presented in *Health & Wellness, Eleventh Edition*

by accessing the Jones & Bartlett Learning website at [go.jblearning.com/Edlin11eCWS](http://go.jblearning.com/Edlin11eCWS).

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### Suggested Readings

- Barondess, J. A. (2005). On the preservation of health. *Journal of the American Medical Association*, 294, 3024–3026. Presents the idea that health is best maintained by adopting healthy living habits early in life and practicing them consistently as one grows older.
- Breslow, L. (1999). From disease prevention to health promotion. *Journal of the American Medical Association*, 281, 1030–1033. Discusses why health promotion is more important than disease prevention.
- Cohen, J. T., et al. (2008). Does preventive care save money? *New England Journal of Medicine*, 358, 661–663. Quantifies the costs savings of many preventive health measures (e.g., smoking relapse, screening all 65-year-olds for diabetes).
- Fraser, G. F., & Shavlik, D. J. (2001). Ten years of life. *Archives of Internal Medicine*, 161, 1645–1652. An investigative study of Seventh-Day Adventists concludes that making lifestyle changes regarding exercise, diet, and weight does result in extension of life expectancy.
- King, D. E., et al. (2007). Turning back the clock: Adopting a healthy lifestyle in middle age. *American Journal of Medicine*, 120, 598–603. Shows that middle aged Americans who newly adopt four healthy behaviors (consuming five or more servings of fruits and vegetables per day, exercising regularly, maintaining a normal body weight, and not smoking cigarettes) are healthier and live longer than those who do not.
- Mokdad, A. H., et al. (2004). Actual causes of death in the United States. *Journal of the American Medical Association*, 291, 1238–1245. Demonstrates how lifestyle contributes to nearly 50% of illness in the United States.

### Recommended Websites

Please visit [go.jblearning.com/Edlin11eCWS](http://go.jblearning.com/Edlin11eCWS) for links to these websites.

#### American Holistic Health Association

Information on healthy lifestyle choices and enhancing your level of wellness.

#### Healthy People 2020 Goals

The U.S. government's national health objectives, which are designed to identify the most significant preventable threats to health and to establish national goals to reduce these health risks.

#### The Mayo Clinic

This site carries authoritative information on a variety of health topics.

#### MedlinePlus

The U.S. National Library of Medicine offers information and education on more than 600 health topics.

#### National Center for Health Statistics

Data on all aspects of health and disease in the United States, from the Centers for Disease Control and Prevention.

#### The Partnership to Fight Chronic Disease

A national coalition of patients, healthcare providers, community organizations, business and labor groups, and health policy experts committed to raising awareness of the number one cause of death, disability, and rising healthcare costs in the United States: rising rates of preventable and treatable chronic diseases.

#### World Health Organization Global Health Atlas

Standardized data and statistics for infectious diseases at country, regional, and global levels supported through information on demography, socioeconomic conditions, and environmental factors. Data can be accessed in the form of reports, charts, and interactive maps.