

Chapter 2: Stress: The Constant Challenge

CHAPTER OBJECTIVES

- Explain what stress is.
- Describe the relationship between stress and health.
- List common sources of stress.
- Describe and apply techniques for managing stress.

KEY TERMS AND DEFINITIONS

stressor Any physical or psychological event or condition that produces physical and psychological reactions.

stress response The physical and emotional reactions to a stressor.

stress The general physical and emotional state that the stressor produces.

nervous system The brain, spinal cord, and nerves.

autonomic nervous system The part of the nervous system that controls certain basic body processes; consists of the sympathetic and parasympathetic divisions.

parasympathetic division The part of the autonomic nervous system that moderates the excitatory effect of the sympathetic division, slowing metabolism and restoring energy supplies.

sympathetic division Division of the autonomic nervous system that reacts to danger or other challenges by accelerating body processes.

endocrine system The system of glands, tissues, and cells that secrete hormones into the bloodstream to influence metabolism and other body processes.

hormone A chemical messenger produced in the body and transported in the bloodstream to target cells or organs for specific regulation of their activities.

cortisol A steroid hormone secreted by the cortex (outer layer) of the adrenal gland; also called *hydrocortisone*.

epinephrine A hormone secreted by the medulla (inner core) of the adrenal gland that affects the functioning of organs involved in responding to a stressor; also called *adrenaline*.

fight, flight, or freeze A defense reaction that prepares a person for conflict or escape by triggering hormonal, cardiovascular, metabolic, and behavioral changes.

homeostasis A state of stability and consistency in an individual's physiological functioning.

personality The sum of behavioral, cognitive, and emotional tendencies.

resilience A personality trait associated with the ability to face adversity and recover quickly

from difficulties.

gender role A culturally expected pattern of behavior and attitudes determined by a person's sex.

general adaptation syndrome (GAS) A pattern of stress responses consisting of three stages: alarm, resistance, and exhaustion.

eustress Stress resulting from a stressor perceived to be pleasant.

distress Stress resulting from a stressor perceived to be unpleasant.

allostatic load The “wear and tear” on the body that results from long-term exposure to repeated or chronic stress.

psychoneuroimmunology (PNI) The study of the interactions among the nervous, endocrine, and immune systems.

acute stress Stress immediately following a stressor; may last only minutes or may turn into chronic stress.

chronic stress Stress that continues for days, weeks, or longer.

mindfulness The intentional cultivation of attention in a way that is nonjudging and nonstriving.

RESOURCES AT A GLANCE

CONNECT (<http://connect.mheducation.com/personalhealth>)

- Reading Quizzes
 - Chapter Quiz
 - Box Activities
 - Internet Activities
 - Wellness Applications
 - Connect to Your Choices
 - Key Term Reviews
 - Wellness Worksheets
 - Videos with Questions
 - Instructor Resources (Course Integrator Guide, Test Bank, PowerPoint slides, Media Bank)
 - Additional Health and Human Performance assignable content (Concept Clips, NewsFlash)
- Find out more about Connect by contacting your McGraw-Hill Learning Technology Representative. Find your representative [here](#).*

GENERAL HEALTH INFORMATION

For the latest health information and news, check the following:

- *Annual Editions: Health* (find the latest at www.mheducation.com/highered/home-guest.html)
- U.S. Government health information and resources (<https://www.usa.gov/health-resources>)
- HealthFinder (<https://healthfinder.gov>)

- MedlinePlus (www.medlineplus.gov)
- NPR Health (<https://www.npr.org/sections/health>)
- Kaiser Health News (<https://khn.org>)
- UC Berkeley Wellness (<http://www.berkeleywellness.com>)
- Reuters health news (<https://www.reuters.com/news/health>)
- Associated Press health news (<https://www.apnews.com/apf-Health>)
- PBS health news (<https://www.pbs.org/newshour/health>)
- CNN health headlines (www.cnn.com/health)
- *Time* health headlines (<http://time.com/section/health>)
- *Newsweek* health headlines (<https://www.newsweek.com/health>)
- *U.S. News and World Report* health headlines (<https://health.usnews.com>)
- ABC health news (<https://abcnews.go.com/Health>)
- CBS health news (<https://www.cbsnews.com/health>)
- NBC health news (<https://www.nbcnews.com/health>)

For additional information on other teaching and learning resources, including course management systems, contact your local McGraw-Hill representative.

CONNECT STUDENT ACTIVITIES AND ASSIGNMENTS

- **Reading Quiz:** What Is Stress?
 - **Classification Activity:** Stress and the Relaxation Response
 - **Wellness Application:** The Stress Response
- **Reading Quiz:** Stress and Health
- **Reading Quiz:** Common Sources of Stress
 - **Video with Questions:** What Stresses You Out?
 - **Box Activity:** Diversity Matters: Diverse Populations, Discrimination, and Stress
 - **Wellness Application:** Avoidable and Unavoidable Stressors
- **Reading Quiz:** Managing Stress
 - **Video with Questions:** College Health Report: Managing Stress with Biofeedback
 - **Internet Activity:** Managing College Stressors
 - **Classification Activity:** Positive and Counterproductive Stress Management Approaches
 - **Wellness Application:** Environment
 - **Box Activity:** Take Charge: Mindfulness Meditation
 - **Wellness Application:** Deep Breathing Exercise (with Audio)
 - **Wellness Application:** Progressive Muscle Relaxation (with Audio)

- **Chapter 2: Connect to Your Choices**
- **Key Term Review 1**
- **Key Term Review 2**
- **Chapter Quiz**
- **Wellness Worksheets:**
 - Identify Your Stress Level and Your Key Stressors
 - Stress Screening
 - Perceived Stress Scale
 - Stress-Management Techniques

LECTURE OUTLINE

This chapter defines stress and the stress response, and it describes ways to cope with stress to minimize its negative health effects and improve wellness.

I. What Is Stress?

- A. Situations that trigger physical and emotional reactions are termed *stressors*, and the reactions themselves are termed the *stress response*.
- B. Stress is the general physical and emotional state that accompanies the stress response.

C. Physical Responses to Stressors

1. Two systems are responsible for physical responses to stressors: the nervous system and the endocrine system.
2. **The Nervous System**
 - a. The nervous system consists of the brain, spinal cord, and nerves.
 - b. The autonomic nervous system, the part of the nervous system not under conscious supervision, controls the stress response. It has two divisions:
 - i. The parasympathetic division is in control when you are relaxed.
 - ii. The sympathetic division is activated when your body is stimulated.
3. **How the Nervous and Endocrine Systems Work Together**
 - a. The endocrine system is a system of glands, tissues, and cells which helps control body systems by releasing hormones and other chemical messengers into the bloodstream.
 - b. The nervous system handles very short-term (acute) stress. The endocrine system handles both acute stress and long-term (chronic) stress.
 - c. In a stressful situation, the nervous and endocrine systems activate the adrenal glands.
 - d. The adrenal glands release the hormones cortisol and epinephrine (adrenaline), which trigger physiological changes.
 - i. Heart and respiration rates increase.

- ii. Hearing and vision become more acute.
- iii. The liver releases extra sugar into the bloodstream to boost energy.
- iv. Perspiration increases.
- v. The brain releases endorphins.
- e. As a group, these physiological changes constitute the fight, flight, or freeze reaction.

4. The Return to Homeostasis

- a. When a stressful situation ends, the parasympathetic division of the autonomic nervous system strives to return the body to its normal state, homeostasis.

5. The Fight, Flight, or Freeze Reaction in Modern Life

- a. The fight-or-flight reaction prepares the body for physical action regardless of the stressor.

D. Cognitive and Psychological Responses to Stressors

1. Unlike the physical fight, flight, or freeze reaction, cognitive and psychological responses to stressors vary.

2. Cognitive Responses

- a. Cognitive appraisal or perception of a potential stressor affects how a particular stressor is viewed.

3. Psychological Responses

- a. Psychological responses to stressors are cognitive but tend to indicate more emotion.
- b. Emotional responses, such as anxiety, depression, and fear, are determined in part by inborn personality and temperament but also can be regulated with coping techniques.
- c. Some coping techniques are positive. Ineffective coping techniques can impair wellness and include overeating and using tobacco, alcohol, and other drugs.

d. Personality

- i. Personality, the sum of cognitive, behavioral, and emotional tendencies, affects how a person perceives and reacts to stressors.
- ii. Some personality traits, like hardiness, help people deal more effectively with stress.
- iii. Personality Traits
 - (1) People with the personality trait of *hardiness* can cope more positively with stress. They are committed to their activities, have a sense of inner purpose, and have an inner locus of control.
 - (2) Two types of motivation have been related to stress and health:
 - a. Stressed power motivation is associated with people who are aggressive and argumentative, who tend to get sick when their need for power is threatened.
 - b. Unstressed affiliation motivation is associated with people who are

drawn to others; these people report less illness.

(3) *Resilience* refers to personality traits associated with social and academic success in at-risk populations, such as people from low-income families and those with mental and physical disabilities.

a. Resilient people tend to face adversity by accepting reality and holding the view that life is meaningful.

e. Research indicates you can change some basic elements of your personality and your typical behaviors and patterns of thinking using positive stress-management techniques.

f. Cultural Background

i. A clash of cultures can be a source of stress.

(1) It is important to accept and appreciate different cultural backgrounds.

g. Gender

i. Strict adherence to gender roles can limit one's response to stress and can itself become a source of stress. It can also affect one's perception of a stressor.

ii. According to the book *Enough As She Is*, women report higher levels of stress than men.

ii. h. Experience

i. Good or bad experiences in the past will color how people respond to similar situations in the future.

E. The Stress Experience as a Whole

1. The physical, cognitive, emotional, and behavioral symptoms of excess negative stress are distinct but also interrelated.

II. Stress and Health

A. Evidence suggests that stress, in combination with other factors, can increase vulnerability to various illnesses and ailments.

B. The General Adaptation Syndrome

1. The term *general adaptation syndrome (GAS)* refers to what many believe is the universal and predictable response pattern to all stressors.

2. The three stages of GAS can be triggered by a pleasant stressor, eustress, or by an unpleasant stressor, distress.

a. The alarm stage is the fight, flight, or freeze reaction. This stage makes the body vulnerable by mobilizing it to cope with a crisis.

b. The resistance stage occurs with continued stress, as the body develops a new level of homeostasis to cope with the added stress, increasing resistance to illness.

c. The exhaustion stage results in the depletion of resources that leave the body vulnerable to disease.

C. Allostatic Load

1. Researchers have termed the long-term wear and tear of the stress response the *allostatic load*. A high allostatic load is linked to a greater risk of disease. Greater susceptibility to disease after repeated or prolonged stress may be due to the stress response itself rather than depletion of resources (exhaustion stage of GAS).

D. Psychoneuroimmunology

1. Psychoneuroimmunology (PNI) studies the interactions among the nervous, endocrine, and immune systems. Hormones and other chemical messengers released during the stress response may inhibit or strengthen the immune system.
2. Acute stress can cause a rise in immune cells, which enhances the immune response.
3. Chronic stress causes prolonged secretion of cortisol, which negatively affects the immune system and causes an acceleration of diseases associated with inflammation, including multiple sclerosis, heart disease, type 2 diabetes, and clinical depression.

4. Cardiovascular Disease

- a. Blood pressure rises during the stress response, and chronic high blood pressure leads to atherosclerosis, a major component in cardiovascular disease. Emotional responses that include anger and hostility seem to be especially harmful.

5. Psychological Disorders

- a. Stress contributes to psychological problems such as depression, panic attacks, anxiety, eating disorders, and posttraumatic stress disorder (PTSD).

6. Altered Immune Function

- a. Health problems linked to impaired immune functioning include colds and other infections, asthma, allergy attacks, and flare-ups of chronic diseases.

7. Headaches

- a. Headaches have been linked to stress. There are three categories of headaches: tension, migraine, and cluster headaches.
 - i. Tension headaches account for about 90% of all headaches. The pain is dull and steady, on both sides of the head. Psychological stress, poor posture, and immobility are leading causes of tension headaches. Treatment can include OTC painkillers, massage, acupuncture, relaxation, hot or cold showers, and rest.
 - ii. Migraine headaches produce throbbing pain that starts on one side and spreads, heightened sensitivity to light, visual disturbances, nausea, dizziness, and fatigue. Triggers may be menstruation, stress, fatigue, atmospheric changes, bright light, sounds, odors, or certain foods. More migraine headaches occur in females. Evidence that exercise may lower stress and thereby prevent migraines is mixed. Exercise may trigger a migraine in some.
 - iii. Cluster headaches are extremely severe, causing intense pain in and

around one eye. More cluster headaches occur in males. No one knows what causes cluster headaches. During cluster periods, it is important to avoid smoking cigarettes or drinking alcohol.

8. Other Health Problems

- a. Other health concerns with demonstrated links to stress are digestive problems, asthma, cancer, skin disorders, fibromyalgia, insomnia and fatigue, injuries, menstrual irregularities, impotence, and pregnancy complications.
- b. Stress can sometimes mask other underlying health problems that should be treated separately and differently.

III. Common Sources of Stress

A. Major Life Changes

1. Any major life change that requires adjustment and accommodation can be stressful. Personality and coping skills are important moderating influences.

B. Daily Hassles

1. Each of life's daily hassles, such as losing your keys or wallet, can be a greater source of stress than major life changes, because they occur more often.
2. For people who perceive hassles negatively, this may provoke a moderate stress response that cumulatively may have a significant effect on health.

C. College Stressors

1. College is a time of major changes. Nearly all students suffer from some form of academic stress, interpersonal stress, time pressure, financial concern, and worry about the future.

D. Job-Related Stressors

1. Stress from work was the third highest reported source of stress in 2017. Chronic job stress can lead to burnout. Improved schedules, communication, job goals, and time management can help.

E. Social Stressors

1. Real Social Networks

- a. Social aspects of a person's life can be both helpful and a source of stress.
- b. In real social networks, prejudice and discrimination are forms of stress created by the community and society in which a person lives.

2. Digital Social Networks

- a. The technology of digital social networks, although helpful in bringing instantaneous information, can impinge on personal space, can waste time, and can cause stress.

F. Other Stressors

1. Conditions or events in the physical environment are environmental stressors. These can range from unavoidable inconveniences to major life stressors.
2. Environmental stressors can include anything from a noisy restaurant to natural

disasters.

3. Internal stressors, such as unrealistic expectations of yourself, can cause stress and damage self-esteem.
4. Other internal stressors are physical and emotional states such as illness and exhaustion; these can be both a cause and an effect of unmanaged stress.
5. Some life-threatening incidents or bodily harm can be traumatic stressors. Victims or witnesses of such events can suffer from anxiety, depression, loss of sleep, and PTSD.

IV. Managing Stress

A. Social Support

1. Social support systems are one tool that many people can use to buffer themselves against the damaging effects of stress.
2. People who have family and friends to help them through times of stress, or who are very involved in groups, often stay healthier and recover faster than those who do not.

B. Volunteering

1. Consider volunteering to help build your social support system and enhance your spiritual wellness.
 - a. Choose an activity that puts you in contact with people.
 - b. Volunteer with a group.
 - c. Know your limits.

C. Communication

1. Assertive communication skills that help people respect the rights of others while protecting one's own rights can help stressful situations from getting out of control.
2. Suppressing feelings or expressing feelings aggressively can lead to problems with relationships.

D. Exercise

1. Regular exercise helps maintain a healthy body and mind and can even stimulate the birth of new brain cells.
2. Exercise can also reduce many of the negative effects of stress by allowing one to expend the nervous energy built up from daily stressors, and by training the body to return to homeostasis more readily after stressful situations.

E. Nutrition

1. A healthful diet provides energy stores for use in stressful situations; eating wisely also improves feelings of self-control and self-esteem.
2. Limiting or avoiding caffeine may be helpful in stress management.
3. Many people overeat in response to stress.

F. Time Management

1. Learning to manage your time can help you cope with everyday stressors.
 - a. Set priorities, focusing on essential and important tasks.
 - b. Schedule tasks for times of peak efficiency.
 - c. Set realistic goals and commit to achieving them by writing them down.
 - d. Budget enough time to achieve goals by making a reasonable estimate and then adding another 10–15%, or even 25%, as a buffer.
 - e. Break up long-term goals into short-term ones.
 - f. Visualize the achievement of goals; mentally rehearse the performance of tasks.
 - g. Keep track of the tasks you put off, in order to analyze your reasons for procrastinating.
 - h. Consider tackling the least pleasurable tasks first.
 - i. Consolidate tasks when possible.
 - j. Identify quick transitional tasks.
 - k. Delegate responsibility—asking for help as appropriate and necessary.
 - l. Say “no” when necessary without feeling guilty.
 - m. Take breaks and allow for real free time to enjoy other activities.
 - n. Avoid your personal “time sinks,” such as watching TV, surfing the internet, and talking on the phone.
 - o. Stop thinking about getting started—just do it!

G. Cultivating Spiritual Wellness

1. Spiritual wellness is associated with more effective coping skills and higher levels of overall wellness.
2. Develop spiritual wellness by seeking out activities that are meaningful to you.
 - a. Look inward.
 - b. Spend time in nature.
 - c. Notice art, architecture, and music.
 - d. Engage in a personal spiritual practice like prayer, meditation, or yoga.
 - e. Reach out to others.

H. Confiding in Yourself through Writing

1. Confide in yourself through writing in a diary or journal.

I. Thinking and Acting Constructively

1. *Mindfulness*, the intentional cultivation of attention in a way that is nonjudging and nonstriving, can help you reduce stress level.
2. Think and act in a constructive way about things that can be controlled rather than those that cannot.

3. Take Control

- a. The feeling that the environment is out of control creates stress.

- 4. Problem-Solve**
 - a. Define the problem.
 - b. Identify the causes.
 - c. Consider multiple solutions.
 - d. Weigh the pros and cons of possible solutions.
 - e. Choose a solution.
 - f. Make a list of the tasks involved in your solution.
 - g. Carry out the tasks.
 - h. Evaluate the outcome and revise if necessary.
- 5. Modify Your Expectations**
 - a. Focus on keeping self-expectations reasonable; and avoid expecting things of others or trying to meet their expectations of you.
- 6. Stay Positive**
- 7. Practice Affirmations**
 - a. Practice repeating positive thoughts, or affirmations, to yourself.
- 8. Cultivate Your Sense of Humor**
 - a. Laughter induces both physiological and psychological relaxation.
- 9. Focus on What's Important**
 - a. Ignore unimportant details and try to “chunk” important material into categories, creating a mental outline that allows you to move from general to specific details.
- J. Body Awareness Techniques**
 1. Practicing mindfulness leads to better problem-solving skills, emotional self-regulation, and resilience.
 - 2. Yoga**
 - a. Hatha yoga emphasizes physical balance and breath control through a system of physical postures.
 - b. It can be a powerful way to cultivate body awareness, ease, muscular endurance, and flexibility.
 - 3. Tai Chi**
 - a. Tai chi (in Chinese, *taijiquan*) is a system of self-defense consisting of a series of slow, fluid, elegant movements that promote relaxation and concentration, moving *with* rather than *against* the stressors of everyday life.
 - 4. Biofeedback**
 - a. Biofeedback can help reduce stress levels by using light, sound, or a metered dial to give feedback to some electronically monitored bodily measure of stress, like perspiration or heartbeat.
 - 5. Sleep**
 - a. Getting enough sleep is not only important physically but improves mood,

competence and self-worth, mental functioning, and emotional functioning.

K. Counterproductive Coping Strategies

1. Tobacco Use

- a. Tobacco products are highly addictive and contain nicotine, a chemical that increases the actions of neurotransmitters. The negative consequences far outweigh any beneficial effects.

2. Use of Alcohol and Other Drugs

- a. Use of alcohol and other drugs to deal with stress places a person at risk of all the short-term and long-term problems associated with drug use.
 - i. Many college students have patterns of alcohol consumption that detract from wellness.
- b. Stimulants such as amphetamines can activate the stress response.
- c. Marijuana use can elicit panic attacks with repeated use. Physiological effects show that it does not cause relaxation; and withdrawal from marijuana may be associated with an increase in stress hormones.
- d. Opioids such as morphine and heroin can mimic the effects of your body's natural painkillers and act to reduce anxiety. However, tolerance to opioids develops quickly, and many users become dependent.
- e. Tranquilizers such as Valium and Xanax mimic some of the functions of the parasympathetic nervous system. Tolerance develops quickly, causing dependency and toxicity.

3. Unhealthy Eating Habits

- a. Food can be psychologically rewarding, but regular use of eating as a mechanism to cope with stress can lead to unhealthy eating habits.
- b. Certain foods and supplements have been thought to fight stress.
 - i. Carbohydrates may reduce the stress response; but a high-carbohydrate diet can lead to weight gain and may be a predisposing factor for psychological stress.
 - ii. Dietary supplements marketed for stress reduction do not have to meet the same standards of safety, effectiveness, and manufacturing as medications.

L. Getting Help

1. If self-help techniques do not provide enough relief, it may be helpful to read about specific approaches, consult a peer counselor, join a support group, or participate in a few psychotherapy sessions.

ORGANIZATIONS, HOTLINES, AND WEBSITES

The internet addresses listed here were accurate at the time of publication.

American Headache Society. Provides information for consumers and clinicians about different types of headaches, their causes, and their treatment.

<http://www.americanheadachesociety.org>

American Psychiatric Association: Healthy Minds, Healthy Lives. Provides information about mental wellness developed especially for college students.

www.psychiatry.org/news-room/apa-blogs.

American Psychological Association. Provides information about stress management and psychological disorders.

<https://www.apa.org/>

<https://www.apa.org/helpcenter>

Association for Applied Psychophysiology and Biofeedback. Provides information about biofeedback and referrals to certified biofeedback practitioners.

<http://www.aapb.org>

Benson-Henry Institute for Mind Body Medicine. Provides information about stress management and relaxation techniques.

<https://bensohenryinstitute.org/>

Center for Mindfulness in Medicine, Health Care, and Society (U Mass Medical School). Provides information about mindfulness-based stress reduction (MBSR) professional training, research, and resources.

<http://www.umassmed.edu/cfm/>

National Institute of Mental Health (NIMH). Publishes brochures about stress and stress management as well as other aspects of mental health.

<http://www.nimh.nih.gov>

Spirit Rock Meditation Center. A resource for meditation retreats and education in mindfulness meditation.

<http://www.spiritrock.org>

CLASSROOM ACTIVITIES

1. **Stressors:** Have students divide into groups of two to four, based on the area among the following they think causes them the greatest stress. Ask each group to take one approach to stress reduction and apply it to their condition. For instance, if pressure to achieve high

grades is the stressor, the group could develop a way to decide what expectations are reasonable, another might plan an exercise regimen to incorporate into a plan for higher overall energy levels, and a third might discuss what foods would be desirable and undesirable on the night before a test. Form groups based on these stressors:

- a. Achieving high grades
 - b. Frustrations with relationship or partner
 - c. Anxieties about roommate and living situations
 - d. Demands made by parents
 - e. Economic concerns
 - f. Deadlines for papers, projects, or tests
 - g. Worries about alcohol, cigarettes, or other drugs
 - h. Balancing job and school responsibilities
 - i. Internet, social media, and/or video game use
2. All students believe that they are busy. Poor time-management skills are a source of stress for many people. This is an issue not only for procrastinators, but also for the Type A personality who is trying to squeeze every possible minute out of the day. Stress is compounded when we realize that in our very busy schedule, we are actually enjoying very little of what we do. Have students record an average 7-day schedule of their activities from 6 a.m. through 12 p.m. Include all aspects of their lives: class time, studying, work, meetings, travel time, food preparation and eating, television viewing, reading the paper, socializing and telephone conversations, laundry, naps, and sleep.
- a. Have students analyze the completed week of activities and discuss their perceptions of what they see. They may see large blocks of time that appear to be wasted. They may also see a schedule that is far too ambitious.
 - b. Discuss methods for gaining control of our time.
3. Have students list three goals for each of the following: the week, the month, the next 6 months,

1 year, 5 years, and 10 years. Then ask them to list the accomplishments they would like to be known for at age 75, such as having been a great family person, traveled extensively, been a leader in their profession, maintained good health, achieved great wealth, been dedicated to philanthropic work, and so on. Ask students to identify whether their life goals at age 75 are somehow woven within each of the categories of goals previously listed.

Some points that may come out in discussion include the insight that we can choose emptiness in our lives by putting off what is important to us. If most or all our goals for this week and for the next 10 years are school-related or work-related, and career success is not what we really are hoping to achieve by age 75, we will be unhappy. All too often people say that right now they need to do these other things and someday they will do what is important to them. John Lennon once wrote, “Life is what happens while we’re making plans.” People who are happy as they age find that what they hope to have at age 75 is woven throughout each stage of their lives.

