Chapter Preview

Stress is the process by which we appraise and respond to challenging or threatening events, or stressors. Stressors may be catastrophes, significant life changes (positive or negative), and daily hassles. Walter Cannon viewed our response to stress as a fight-or-flight system. Hans Selye saw it as a three-stage general adaptation syndrome. Another subfield, psychoneuroimmunology, focuses on mind-body interactions.

Exposure to prolonged stress can increase our susceptibility to serious illness. Modern research assesses the health consequences of various life experiences. Stress may affect the progression of several serious illnesses, including AIDS and cancer. Coronary heart disease has been linked with the anger-prone Type A personality.

Several factors affect our ability to cope with stress, including our feelings of personal control, our basic outlook on life, and our supportive connections. Stress management programs include training in aerobic exercise, meditation, and relaxation. Researchers seek to identify “intervening variables” that may link spirituality and health.

Positive psychology is the scientific study of human flourishing. Happy people live healthier and more energized and satisfied lives. Happiness boosts people’s perceptions of the world and their willingness to help others. However, even significant good events seldom increase happiness for long, a fact explained by the adaptation-level and relative deprivation principles.

Chapter Guide

Text Questions/Online Discussion Forum: In Your Everyday Life

At the end of each chapter is at least one “In Your Everyday Life” question that helps students relate the topics to their own lives. We repeat those questions here because they also serve as useful prompts for online or other discussion forums.

1. In what ways have you experienced the stress adaptation phases of alarm, resistance, and exhaustion in your life as a student?

2. Do you think you are Type A, Type B, or somewhere in between? In what ways has this been helpful to you, and in what ways has this been a challenge?
3. Can you remember a time when you felt better after discussing a problem with a loved one, or even after playing with your pet? How did it help you to cope?

4. What strategies have you used to cope with stress in your own life? How well are they working? What other strategies could you try?

5. How much control do you feel you have over your life? What changes could you make to increase your sense of control?

Introductory Exercise: Fact or Falsehood?

Stress: Some Basic Concepts

- Project: Constructing a Family Health History (p. 740)

10-1. Discuss how our appraisal of an event affects our stress reaction, and identify the three main types of stressors.

When pollsters asked collegians how often they experienced stress, 85 percent recalled experiencing stress during the past three months. When short-lived or perceived as a challenge, stressors can have positive effects. Prolonged stress increases our risk for serious illness and death.

- Exercises: Stress Level and Vulnerability to Stress (p. 741); Stress Symptoms (p. 741); The Stress Appraisal Measure (p. 742)

- Lectures: Early Stress at Home and Later Physical Problems (p. 740)

Stress is not just a stimulus or a response; rather, it is the process by which we perceive and respond to a threatening or challenging event. When perceived as challenges, stressors can arouse and motivate us to conquer problems. When perceived as threats, prolonged stressors can harm us and increase the risk of illness.

- Exercises: College Undergraduate Stress Scale (p. 742)

- Lectures: Hassles and Uplifts (p. 743); Stress and Economic Change (p. 745)

- PsychSim 5: All Stressed Out (p. 740)

Catastrophic earthquakes, hurricanes, and fires can result in significant damage to emotional and physical health. Those who experience significant life changes, such as the death of a spouse, divorce, or loss of a job, are vulnerable to disease. Experiencing a cluster of such crises puts one even more at risk. Daily hassles, such as too many things to do, long lines at the store, irritating housemates, and e-mail spam, may also be sources of stress. Over time, these little stressors take a toll on our physical and mental well-being.

10-2. Describe how the body responds to stress.

Walter Cannon observed that, in response to stress, the sympathetic nervous system activates the secretion of stress hormones, triggers increased heart rate and respiration, diverts blood from digestion to skeletal muscles, dulls feelings of pain, and releases sugar and fat from the body’s stores, all to prepare the body for either fight or flight.

In Hans Selye’s general adaptation syndrome (GAS), the body’s adaptive response to stress is composed of three stages. In Phase 1, we experience an alarm reaction due to the sudden activation of our sympathetic nervous system. Heart rate increases and blood is diverted to the skeletal muscles. With our resources mobilized, we then fight the challenge during Phase 2, resistance. Temperature, blood pressure, and respiration remain high, and there is a sudden outpouring of stress hormones. If the stress is persistent, it may eventually deplete our body’s reserves during Phase 3, exhaustion. With exhaustion, we are more vulnerable to illness or even, in extreme cases, collapse and death.
Stress Effects and Health

10-3. Explain how stress influences our immune system.

Psychoneuroimmunology studies how psychological, neural, and endocrine processes together affect our immune system and resulting health.

The secretion of stress hormones can suppress the immune system’s white blood cells, called lymphocytes. B lymphocytes are important in fighting bacterial infections, and T lymphocytes fight cancer cells, viruses, and foreign substances. Two other agents of the immune system are the macrophage and the natural killer cells (NK cells). Animals that are physically restrained, given unavoidable electric shocks, or subjected to noise, crowding, cold water, social defeat, or maternal separation, have weaker immune systems. Studies suggest that stress similarly depresses the human immune system, making us more vulnerable to illness.

Your age, nutrition, genetics, body temperature, and stress all influence your immune system activity. The immune system can err in two directions: overreacting it may attack the body’s own tissues, or underreacting it may allow a virus to erupt.

Stress and negative emotions correlate with a progression of HIV infection to AIDS and with the speed of decline in those infected. Efforts to reduce stress also help somewhat to control the disease. Educational initiatives, grief support groups, talk therapy, relaxation training, and exercise programs that reduce distress have all had positive consequences for HIV-positive individuals.

Although stress does not produce cancer cells, some researchers have reported that people are at risk for cancer a year or so after experiencing depression, helplessness, or grief. A large study found that people with a history of workplace stress had greater risk of colon cancer than those who reported no such problems. Although a relaxed, hopeful attitude may enhance the body’s natural defenses against a few proliferating cancer cells, merely maintaining a determined attitude is not likely to derail the powerful biological forces at work in advanced cancer or AIDS.


Stress can increase the risk of coronary heart disease, the leading cause of death in the United States and many other countries. Heart disease occurs when the blood vessels that nourish the heart close. Risk of heart disease is increased by high blood pressure, family history, smoking, obesity, a high-fat diet, physical inactivity, and a high cholesterol level. Heart disease has been linked with the competitive, hard-driving, and impatient Type A personality. The toxic core of Type A is negative emotions, especially the anger associated with an aggressively reactive temperament. Under stress, the sympathetic nervous system of the Type A person redistributes bloodflow to the muscles and away from internal organs, such as the liver, which removes cholesterol and fat from the blood. The resulting excess cholesterol later gets deposited around the heart. The more easygoing Type B personality is less physiologically reactive when harassed or given a difficult challenge and less susceptible to coronary heart disease. More recently, researchers have identified Type D (for distressed) personalities, who suppress their negative emotion to avoid social disapproval and who are therefore at significantly increased risk for mortality and nonfatal heart attack. Depression also can have a toxic effect on a person’s health.
Coping With Stress

10-5. Identify two basic ways that people cope with stress.
We cope with stress by finding emotional, cognitive, or behavioral ways to alleviate it. Through problem-focused coping, we attempt to alleviate stress by changing the stressor or the way we interact with that stressor. We tend to use problem-focused strategies when we think we can change the situation, or at least change ourselves to more capably deal with the situation. We tend to use emotion-focused coping when we believe we cannot change a situation. For example, we may attempt to gain emotional distance from a damaging relationship.

10-6. Describe how our sense of control influences stress and health.
Personal control refers to how much we perceive having control over our environment. Rats that experience uncontrollable shock are more susceptible to ulcers and experience a lowered immunity to disease. Feeling helpless and oppressed may lead to a state of passive resignation called learned helplessness. Both animal and human studies show that loss of control provokes the strongest stress response (provoking an outpouring of stress hormones), which can contribute to health problems.

Some researchers have suggested that today’s Western cultures offer too many choices. This tyranny of choice brings information overload and a greater likelihood that we will feel regret over some of the things we left behind.

As compared to those with an external locus of control, those with an internal locus of control cope better with stressful events. ‘Internals’ also have achieved more in school and work, acted more independently enjoyed better health, and felt less depressed. One place to start increasing our sense of control is to increase our self-control—the ability to control impulses and delay immediate gratification. People with more self-control earn higher grades, accumulate more wealth, enjoy better mental health, and have stronger relationships.

10-7. Discuss how optimists and pessimists differ, and explain why our outlook on life matters.
Optimism and pessimism influence stress vulnerability. Optimists expect to have more control, to cope well with stressful events, and to enjoy better health. Compared with pessimists, optimists respond to stress with smaller increases in blood pressure, recover more quickly from heart bypass surgery, enjoy better moods, and have stronger immune systems. Optimism may also be related to living a longer life. Excessive optimism, however, can blind us to real risks, so it pays to also be realistic.

10-8. Discuss how social support and finding meaning in life influence health.
Feeling liked and encouraged by intimate friends and family promotes both happiness and health. Compared with those who have few social ties, people supported by close relationships are less
likely to die early. Carefully controlled studies also indicate that people in low-conflict marriages live longer, healthier lives than the unmarried. Social support strengthens immune functioning and calms the cardiovascular system, which lowers blood pressure and stress hormones. Close relationships provide an opportunity to confide painful feelings. When catastrophes strike or significant life changes occur, an important part of coping with stress is finding meaning in life. Even companionable pets help people cope with stressful events.

Managing Stress Effects

10-9. Describe how well aerobic exercise helps to manage stress and improve well-being.

Aerobic exercise, sustained activity that increases heart and lung fitness, can reduce stress, depression, and anxiety. It strengthens the heart, increases bloodflow, keeps blood vessels open, and reduces the hormone and blood pressure reaction to stress. Research has linked aerobic exercise to increased activity of serotonin, a neurotransmitter that boosts moods.

- Lecture: Fringe Medicine (p. 760)
- Exercise: The Relaxation Response (p. 759)
- Exercise/Project: Meditation (p. 759)
- Exercise/Critical Thinking Break: Health Benefits of Time Spent in Natural Settings (p. 758)

10-10. Describe the ways in which relaxation and meditation influence stress and health.

Like aerobic exercise, relaxation can improve our well-being. For example, research indicates that relaxation procedures can provide relief from headaches, high blood pressure, anxiety, and insomnia. In Type A heart-attack survivors, relaxation lowers rates of recurring attacks. With mindfulness meditation, a stress management program, people sit down, close their eyes, and silently attend to their inner state, without judging it. Researchers have found that mindfulness training improved immune system functioning and coping; it is also linked with reduced sleep problems, cigarette use, binge eating, and alcohol and other substance abuse. It seems to help us make positive changes by strengthening connections among regions of our brain, activating brain regions associated with more reflective awareness, and calming brain activation in emotional situations.

- Lectures: Religion’s Costs and Benefits (p. 760); Spirituality and Health (p. 761)

10-11. Discuss whether religious involvement relates to health.

Research indicates that religiously active people live longer than those who are not religiously active. Investigators who attempt to explain this faith factor have isolated three intervening variables. (1) Religiously active people have healthier lifestyles; for example, they smoke and drink less. (2) Faith communities provide social support networks and often encourage marriage, which, when happy, is linked with better health and a longer life span. (3) Attendance at religious services is often accompanied by a coherent worldview, sense of hope for the future, feelings of acceptance, and a relaxed meditative state. These may enhance positive emotions and immune functioning and decrease feelings of stress and anxiety.

Happiness

- Exercises: What Is Satisfying About Satisfying Events? (p. 702); Happiness Measures (p. 702); Flourishing: Beyond Positive Emotions and Pleasure (p. 703); Orientations to Happiness and Life Satisfaction (p. 703); Adaptation Level (p. 706); Relative Deprivation (p. 706)
- Exercise/Lecture Break: A Positive Spin on Things (p. 702)
- Lectures: Two Dimensions of Positive Affect (p. 701); Can Money Buy Happiness? (p. 704); Rising Happiness and Freedom of Choice (p. 705); Laughter (p. 707)

10-12. Identify the causes and consequences of happiness.

Bouncing back from serious losses, people may feel a stronger sense of self-esteem and a deeper sense of purpose. Tough challenges, especially early in life, can foster personal growth and emotional resilience.
A good mood boosts people’s perceptions of the world and their willingness to help others (the *feel-good, do-good phenomenon*). Mood-boosting experiences make us more likely to give money, pick up someone’s dropped papers, volunteer time, and do other good deeds. The reverse is also true: Doing good makes us happy.

With the rise of *positive psychology*, the study of happiness became a major area of research. Part of this research is the study of *subjective well-being*, which refers to self-perceived happiness or satisfaction with life.

**Exercises:** Adaptation Level (p. 706); Relative Deprivation (p. 706)

Positive emotion rises over the early to middle part of most days. Although stressful events trigger bad moods, the gloom nearly always lifts by the next day. Times of elation are similarly hard to sustain and, over the long run, our emotional ups and downs tend to balance. Even significant bad events, such as a serious illness, seldom destroy happiness for long. The surprising reality is that we overestimate the duration of emotions and underestimate our resiliency.

At a basic level, money helps us to avoid misery, but having it is no guarantee of happiness. Once we have enough money for comfort and security, piling up more and more matters less and less. For example, during the last four decades, the average U.S. citizen’s buying power almost tripled, yet the average American is no happier. More generally, research indicates that economic growth in wealthy countries has not boosted morale or social well-being.

The *adaptation-level phenomenon* describes our tendency to judge various stimuli relative to those we have previously experienced. If our income or social prestige increases, we may feel initial pleasure. However, we then adapt to this new level of achievement, come to see it as normal, and require something better to give us another surge of happiness.

*Relative deprivation* is the perception that one is worse off relative to those with whom one compares oneself. As people climb the ladder of success, they mostly compare themselves with those who are at or above their current level. This explains why increases in income may do little to increase happiness.

High self-esteem, close friendships or a satisfying marriage, and meaningful religious faith are among the predictors of happiness. Age, gender, parenthood, and physical attractiveness are among the factors unrelated to happiness.

Although happiness is genetically influenced, research provides some suggestions for improving your mood and increasing your satisfaction with life: Realize that enduring happiness may not come from financial success, take control of your time, act happy, seek work and leisure that engage your skills, exercise and sleep well, nurture your closest relationships, focus beyond the self, count your blessings, and nurture your spiritual self.
### Fact or Falsehood?

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<td>1. Pollsters report that 85 percent of college students indicate they had experienced stress during the past three months.</td>
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<td>2. Adults who are over age 65 reported more stress during “a lot of the day yester-day” than adults who are under age 65.</td>
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<td>3. Women have stronger immune systems than men, making them less likely to get infections.</td>
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<td>4. Stress creates cancer cells.</td>
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<td>5. The more choices people have in life, the greater their sense of satisfaction.</td>
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<td>6. Citizens who live in stable democracies report higher levels of happiness.</td>
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<td>7. Compared with their parents’ generation, more young Americans now endorse an external locus of control.</td>
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<td>8. Compared with pessimists, optimists respond to stress with smaller increases in blood pressure and recover more quickly from heart bypass surgery.</td>
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<td>9. Compared with inactive adults, people who exercise live, on average, two years longer.</td>
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<td>10. Religiously active people do not live as long as those who are not religiously active.</td>
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