

# 14

# Stress and Health

## CHAPTER OVERVIEW

Behavioral factors play a major role in maintaining health and causing illness. The effort to understand this role more fully has led to the emergence of the interdisciplinary field of behavioral medicine. The subfield of health psychology focuses on questions such as: How do our perceptions of a situation determine the stress we feel? How do our emotions and personality influence our risk of disease? How can psychology contribute to the prevention of illness?

Chapter 14 addresses key topics in health psychology. First and foremost is stress—its nature, its effects on the body, psychological factors that determine how it affects us, and how stress contributes to heart disease, infectious diseases, and cancer. The chapter concludes by looking at physical and psychological factors that promote good health, including exercise and social support, and examining two illness-related behaviors: smoking and obesity

NOTE: Answer guidelines for all Chapter 14 questions begin on page 372.

## CHAPTER REVIEW

First, skim each section, noting headings and boldface items. After you have read the section, review each objective by answering the fill-in and essay-type questions that follow it. As you proceed, evaluate your performance by consulting the answers beginning on page 372. Do not continue with the next section until you understand each answer. If you need to, review or reread the section in the textbook before continuing.

## Introducing Stress and Health (p. 549)

**Objective 1:** Identify some behavior-related causes of illness and death, and describe health psychology's contribution to the field of behavioral medicine.

1. The four leading causes of serious illness and death in the United States are \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.
2. Today, half the mortality from the 10 leading causes of death can be traced to people's \_\_\_\_\_.
3. List several of the behaviors that have been linked to the leading causes of death:  
\_\_\_\_\_  
\_\_\_\_\_
4. The field that integrates behavioral and medical knowledge relevant to health and disease is \_\_\_\_\_.
5. The subfield of psychology that contributes to behavioral medicine is called \_\_\_\_\_ psychology.

**Stress and Illness** (pp. 549–561)

David Myers at times uses idioms that are unfamiliar to some readers. If you do not know the meaning of any of the following words, phrases, or expressions in the context in which they appear in the text, refer to pages 378–379 for an explanation: *tense . . . clenched teeth . . . churning stomach; slippery concept; heart rate zooms; uprooting; a cluster of crises; Daily Hassles; mellow and laid-back; after the honeymoon period; "combat ready"; headless horseman; hyping.*

**Objective 2:** Discuss the role of appraisal in the way we respond to stressful events.

1. Out of every ten people, \_\_\_\_\_ (how many?) report experiencing frequent stress.
2. Stress is not merely a \_\_\_\_\_ or a \_\_\_\_\_. Rather, it is the \_\_\_\_\_ by which we perceive and respond to environmental threats and challenges.
3. This definition highlights the fact that stressors can have \_\_\_\_\_ (only negative/both positive and negative) effects, depending on how they are perceived.

**Objective 3:** Describe the dual-track system by which our body responds to stress, and identify the three phases of the general adaptation syndrome.

4. In the 1920s, physiologist Walter \_\_\_\_\_ began studying the effect of stress on the body. He discovered that the hormones \_\_\_\_\_ and \_\_\_\_\_ are released into the bloodstream in response to stress. This and other bodily changes due to stress are mediated by the \_\_\_\_\_ nervous system, thus preparing the body for \_\_\_\_\_.
5. Physiologists have discovered that in response to stress the cerebral cortex, via the \_\_\_\_\_ and the \_\_\_\_\_ gland, triggers the outer part of the \_\_\_\_\_ to release

- \_\_\_\_\_ stress hormones such as \_\_\_\_\_.
6. Another common response to stress among women has been called " \_\_\_\_\_," which refers to the increased tendency to \_\_\_\_\_.
  7. In studying animals' reactions to stressors, Selye repeatedly found three physiological effects: enlargement of the \_\_\_\_\_ cortex, shrinkage of the \_\_\_\_\_ gland, and bleeding \_\_\_\_\_. He referred to this bodily response to stress as the \_\_\_\_\_.
  8. During the first phase of the GAS—the \_\_\_\_\_ reaction—the person is in a state of shock due to the sudden arousal of the \_\_\_\_\_ nervous system.
  9. This is followed by the stage of \_\_\_\_\_, in which the body's resources are mobilized to cope with the stressor.
  10. If stress continues, the person enters the stage of \_\_\_\_\_. During this stage, a person is \_\_\_\_\_ (more/less) vulnerable to disease.
  11. One recent study found that women who suffered enduring caregiver stress had especially short \_\_\_\_\_, which are pieces of \_\_\_\_\_ at the end of \_\_\_\_\_ that are important in allowing cells to \_\_\_\_\_. In another study, people who suffered a prolonged flood of stress had a shrunken \_\_\_\_\_, the brain structure responsible for explicit memories.
- Objective 4:** Discuss the health consequences of catastrophes, significant life changes, and daily hassles.
12. In the wake of catastrophic events, such as floods, hurricanes, and fires, there often is an increase in the number of \_\_\_\_\_.

13. Research studies have found that people who have recently been widowed, fired, or divorced are \_\_\_\_\_ (more/no more) vulnerable to illness than other people.
14. For most people, the most significant sources of stress are \_\_\_\_\_. The stresses that accompany poverty and unemployment, for example, often compounded by \_\_\_\_\_, may account for the higher rates of \_\_\_\_\_ among residents of urban ghettos.

**Objective 5:** Discuss the role of stress in causing coronary heart disease, and contrast Type A and Type B personalities.

15. The leading cause of death in North America is \_\_\_\_\_. List several risk factors for developing this condition: \_\_\_\_\_.
16. Friedman and Rosenman discovered that tax accountants experience an increase in blood \_\_\_\_\_ level and blood-\_\_\_\_\_ speed during tax season. This showed there was a link between coronary warning indicators and \_\_\_\_\_.

Friedman and Rosenman, in a subsequent study, grouped people into Type A and Type B personalities. Characterize these types, and indicate the difference that emerged between them over the course of this nine-year study.

18. An experiment by Williams showed that when Type A students were challenged, their output of stress hormones was \_\_\_\_\_ (greater than/the same as) that of their Type B classmates. These hormones may increase the buildup of \_\_\_\_\_ in the artery walls. The hardening of the arteries that may result is called \_\_\_\_\_.
19. When a \_\_\_\_\_ (Type A/Type B) person is angered, blood flow is diverted away from the internal organs, including the liver, which is responsible for removing \_\_\_\_\_ and fat from the blood. Thus, such people have elevated levels of these substances in the blood.
20. The Type A characteristic that is most strongly linked with coronary heart disease is \_\_\_\_\_, especially \_\_\_\_\_.
21. Another toxic emotion is \_\_\_\_\_; researchers have found that \_\_\_\_\_ are more than twice as likely to develop heart disease as \_\_\_\_\_.
22. Depression \_\_\_\_\_ (increases/has no effect on) one's risk of having a heart attack or developing other heart problems.

**Objective 6:** Distinguish between a psychophysiological illness and hypochondriasis.

23. In \_\_\_\_\_ illnesses, physical symptoms are produced by psychological causes. This is distinct from the misinterpretation of normal physical sensations as symptoms of a disease, called \_\_\_\_\_.
24. Examples of such illnesses are certain types of \_\_\_\_\_ and \_\_\_\_\_. Such illnesses appear to be linked to \_\_\_\_\_.
25. The term \_\_\_\_\_ was once used to describe such illness. However, this term implied that symptoms were \_\_\_\_\_.

**Objective 7:** Describe the effect of stress on immune system functioning.

26. The body's system of fighting disease is the \_\_\_\_\_ system. This system includes two types of white blood cells, called \_\_\_\_\_: the \_\_\_\_\_, which fight bacterial infections, and the \_\_\_\_\_, which form in the \_\_\_\_\_ and attack viruses, cancer cells, and foreign substances. Another immune agent, called the \_\_\_\_\_, pursues and ingests foreign substances.
27. Responding too strongly, the immune system may attack the body's tissues and cause \_\_\_\_\_ or an \_\_\_\_\_ reaction. Or it may \_\_\_\_\_, allowing a dormant herpes virus to erupt or \_\_\_\_\_ cells to multiply.
28. \_\_\_\_\_ (Women/Men) are the immunologically stronger gender. This makes them less susceptible to \_\_\_\_\_, but more susceptible to \_\_\_\_\_ diseases such as \_\_\_\_\_ and \_\_\_\_\_.
29. Stress can suppress the lymphocyte cells, resulting in a(n) \_\_\_\_\_ (increase/decrease) in disease resistance. Stress diverts energy from the \_\_\_\_\_ to the \_\_\_\_\_ and \_\_\_\_\_, mobilizing the body for action.

**Objective 8:** Discuss the findings on the link between stress and AIDS.

30. Worldwide, the fourth leading cause of death is \_\_\_\_\_, caused by the \_\_\_\_\_, which is spread primarily through the exchange of \_\_\_\_\_ and \_\_\_\_\_.
31. Stressful life circumstances \_\_\_\_\_ (have/have not) been shown to accelerate the progression of this chronic disease.
32. Educational initiatives, support groups, and other efforts to control stress \_\_\_\_\_

(have/have not) been shown to have positive consequences on HIV-positive individuals.

**Objective 9:** Discuss the findings on the link between stress and cancer.

33. Stress and \_\_\_\_\_ emotions \_\_\_\_\_ (have/have not) been linked to cancer's rate of progression.
34. When rodents were inoculated with \_\_\_\_\_ cells or given \_\_\_\_\_, tumors developed sooner in those that were also exposed to \_\_\_\_\_ stress.
35. Stress \_\_\_\_\_ (does/does not) create cancer cells.

**Objective 10:** Describe the impact of learning on immune system functioning.

36. Experiments by Ader and Cohen demonstrate that the functioning of the body's immune system \_\_\_\_\_ (can/cannot) be affected by conditioning.
37. In Ader and Cohen's classic experiment, the unconditioned stimulus was the \_\_\_\_\_, and the unconditioned response was \_\_\_\_\_.
38. When stress is momentary, the health costs are \_\_\_\_\_ (still heavy/negligible).
39. It is important to remember that psychological states are \_\_\_\_\_ events that influence other parts of our \_\_\_\_\_ system.

### Promoting Health (pp. 562–592)

If you do not know the meaning of any of the following words, phrases, or expressions in the context in which they appear in the text, refer to pages 379–380 for an explanation: *laughter is the best medicine; heartaches; cold fact . . . nothing to sneeze at; "open heart therapy"; run away from their troubles; boosts our mood; overblown and oversold; Is there fire underneath all this smoke?; cool models; slow-motion suicide; gauche rather than cool; win the battle of the bulge; apple-shaped; scarfing too many hot fudge sundaes; the specifics of our genes predispose the size of our jeans; thinner wallet; couch potatoes.*

**Objective 11:** Contrast problem-focused coping and emotion-focused coping.

1. People learn to \_\_\_\_\_ with stress by finding \_\_\_\_\_, \_\_\_\_\_, or \_\_\_\_\_ ways to alleviate it.
2. When we cope directly with a stressor, we are using \_\_\_\_\_ coping.
3. When we attempt to alleviate stress by avoiding it and attending to emotional needs, we are using \_\_\_\_\_ coping.
4. People tend to use \_\_\_\_\_ coping when they feel a sense of \_\_\_\_\_ over a situation. They turn to \_\_\_\_\_ coping when they cannot or believe they cannot \_\_\_\_\_ a situation.

**Objective 12:** Describe how a perceived lack of control can affect health.

5. Negative situations are especially stressful when they are appraised as \_\_\_\_\_. Control may explain why poorer people are more at risk for premature \_\_\_\_\_ than those who are more affluent.
6. With higher economic status comes lower risks of infant \_\_\_\_\_, a low \_\_\_\_\_, smoking, and \_\_\_\_\_.
7. In animals and humans, sudden lack of control is followed by a drop in immune responses, a(n) \_\_\_\_\_ (increase/decrease) in blood pressure, and a rise in the levels of \_\_\_\_\_.

**Objective 13:** Discuss the links among explanatory style, stress, and health.

8. People who have an \_\_\_\_\_ explanatory style are less likely than others to suffer ill health.

9. Researchers have found that life events may be less stressful for people who have a good sense of \_\_\_\_\_.

10. One study found that laughter caused improved \_\_\_\_\_ and increased \_\_\_\_\_.

**Objective 14:** Describe some of the ways that social support acts as a stress buffer.

11. Another buffer against the effects of stress is \_\_\_\_\_ support.

12. Longitudinal research reveals that a \_\_\_\_\_

at age 50 predicts healthy aging better than \_\_\_\_\_

at the same age.

State several possible reasons for the link between health and social support.

13. James Pennebaker has found that emotional \_\_\_\_\_ can adversely affect our physical health, while \_\_\_\_\_ suppressed thoughts may promote well-being.

14. Health can also be improved by \_\_\_\_\_ about personal traumas in a diary.

15. Another way to reduce stress is to talk about it. In another study by Pennebaker, Holocaust survivors who were the most \_\_\_\_\_ had the most improved health.

**Objective 15:** Discuss the advantages of aerobic exercise as a technique for managing stress and fostering well-being.

16. Sustained exercise that increases heart and lung fitness is known as \_\_\_\_\_ exercise.

17. Experiments \_\_\_\_\_ (have/have not) been able to demonstrate conclusively that such exercise reduces anxiety, depression, and stress.
18. Exercise increases the body's production of mood-boosting neurotransmitters such as \_\_\_\_\_, \_\_\_\_\_, and the \_\_\_\_\_. It also modestly enhances cognitive abilities, such as \_\_\_\_\_.
19. By one estimate, moderate exercise adds \_\_\_\_\_ (how many?) years to one's life expectancy.

**Objective 16:** Compare the benefits of biofeedback and relaxation training as stress-management techniques, and discuss meditation as a relaxation technique.

20. A system for recording a physiological response and providing information concerning it is called \_\_\_\_\_. The instruments used in this system \_\_\_\_\_ (provide/do not provide) the individual with a means of controlling physiological responses.
21. Lowered blood pressure, heart rate, and oxygen consumption have been found to be characteristic of people who regularly practice \_\_\_\_\_. The \_\_\_\_\_ response accompanies sitting quietly, with closed eyes, while breathing deeply.
22. Brain scans of experienced meditators reveal decreased activity in the \_\_\_\_\_ lobe and increased activity in the \_\_\_\_\_ lobe.
23. (Thinking Critically) Acupuncture, massage therapy, homeopathy, and similar treatments comprise the growing health care market called \_\_\_\_\_. In China, \_\_\_\_\_ therapies have flourished for centuries, as have acupuncture and acupressure therapies that claim to correct imbalances in the flow of the energy called \_\_\_\_\_.

24. (Thinking Critically) Critics of alternative medicine point out that such treatments seem especially effective with \_\_\_\_\_ diseases such as arthritis and \_\_\_\_\_, as well as with diseases that disappear naturally—a phenomenon called \_\_\_\_\_. Critics also argue that the seeming effectiveness of alternative medicine is due to a \_\_\_\_\_ effect.

**Objective 17:** Discuss the correlation between religiosity and longevity, and offer some possible explanations for this link.

25. Until fairly recently in history, the healing traditions of \_\_\_\_\_ and \_\_\_\_\_ have worked \_\_\_\_\_ (together/separately).
26. Surveys reveal that most family physicians \_\_\_\_\_ (believe/do not believe) that religion and spirituality are related to health and healing.
27. Several recent studies demonstrate that religious involvement \_\_\_\_\_ (predicts/does not predict) health and longevity.

State two possible intervening variables that might account for the "faith factor" in health.

**Objective 18:** Explain why people smoke.

28. Fewer than \_\_\_\_\_ percent of visits to primary care physicians are for problems that are clearly \_\_\_\_\_. Most visits are presumed to be for problems that involve \_\_\_\_\_ factors.

State several of the physical and psychological problems that are correlated with smoking.

29. Smoking usually begins during \_\_\_\_\_ and is especially common among those who \_\_\_\_\_.

Those who start smoking have friends who serve as \_\_\_\_\_ and whose behavior they \_\_\_\_\_.

30. As with other addictions, smokers become \_\_\_\_\_ on nicotine, develop \_\_\_\_\_ to its effects, and experience \_\_\_\_\_ symptoms when attempting to quit.
31. By terminating an aversive state, smoking provides a person with a powerful \_\_\_\_\_. In addition, nicotine triggers the release of epinephrine and norepinephrine, which increase \_\_\_\_\_ and mental \_\_\_\_\_, and of neurotransmitters that calm \_\_\_\_\_ and reduce \_\_\_\_\_.
32. Consistent with the \_\_\_\_\_ approach, twin studies indicate a \_\_\_\_\_ percent heritability of smoking addiction. Smokers and nonsmokers also may differ in a \_\_\_\_\_ that influences responses to the neurotransmitter \_\_\_\_\_.

**Objective 19:** Discuss ways of helping smokers to quit smoking—or preventing young people from ever starting.

33. Most programs to help people quit smoking \_\_\_\_\_ (are/are not) very effective in the long run. The decline in the smoking rate among Americans is most pronounced

among \_\_\_\_\_ (males/females) and those at \_\_\_\_\_ (higher/lower) socioeconomic levels.

34. Worldwide, per-person cigarette consumption is near an all-time \_\_\_\_\_ (low/high). Rates of smoking are increasing most dramatically in \_\_\_\_\_ countries where many people are unaware of the dangers of smoking.
35. Successful educational programs to prevent adolescents from ever starting smoking include three key ingredients:
- \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_
36. Another effective technique for discouraging smoking is to make it more immediately \_\_\_\_\_.

**Objective 20:** Discuss the adaptive advantages and modern-day disadvantages of a body that stores fat.

37. In developing societies where people face \_\_\_\_\_, obesity is considered a sign of \_\_\_\_\_ and \_\_\_\_\_.

Cite some of the ways in which obesity is a threat to health.

38. The risks of obesity are greater for people who carry their weight at their \_\_\_\_\_. It also has been linked in women to their risk of late-life \_\_\_\_\_ disease and brain tissue loss.
39. People who are overweight at age 40 die \_\_\_\_\_ years (how many?) earlier than those who are not.

**Objective 21:** Describe some of the social effects of obesity.

40. Obese people are often stereotyped as \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.
41. One study found that obese women earned \_\_\_\_\_ than a control group of nonobese women and were less likely to be \_\_\_\_\_.
42. In one experiment, job applicants were rated as less worthy of hiring when they were made to appear \_\_\_\_\_.

**Objective 22:** Discuss some research findings on the role of heredity and environment in determining body weight.

43. The energy equivalent of a pound of fat is approximately \_\_\_\_\_ calories. The immediate determinant of body fat is the size and number of \_\_\_\_\_ one has. This number is, in turn, determined by several factors, including \_\_\_\_\_.
44. The size of fat cells \_\_\_\_\_ (can/cannot) be decreased by dieting; the number of fat cells \_\_\_\_\_ (can/cannot) be decreased by dieting.
45. Fat tissue has a \_\_\_\_\_ (higher/lower) metabolic rate than lean tissue. The result is that fat tissue requires \_\_\_\_\_ (more/less) food energy to be maintained.
46. The body weight "thermostat" of obese people \_\_\_\_\_ (is/is not) set to maintain a higher-than-average weight. When weight drops below this setting, \_\_\_\_\_ increases and \_\_\_\_\_ decreases.

Explain why, metabolically, many obese people find it so difficult to become and stay thin.

47. Studies of adoptees and twins \_\_\_\_\_ (do/do not) provide evidence of a genetic influence on obesity.
48. Recent experiments reveal that obese mice have a defective \_\_\_\_\_ for producing the protein \_\_\_\_\_. Increased levels of this protein signal the \_\_\_\_\_ to curb \_\_\_\_\_ and increase \_\_\_\_\_. When obese mice are given injections of this protein, they become \_\_\_\_\_ (more/less) active and \_\_\_\_\_ (gain/lose) weight.
49. Obesity is \_\_\_\_\_ (more/less) common among lower-class than upper-class women and \_\_\_\_\_ (does/does not) vary from culture to culture.

**Objective 23:** Discuss the chances of success for an overweight person who wants to lose weight.

50. Most obese persons who lose weight \_\_\_\_\_ (gain/do not gain) it back.
51. People who try repeatedly to lose weight are \_\_\_\_\_ (more/no more) likely to succeed.
52. (Close-Up) State several pieces of advice for those who want to lose weight.