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.

17. In relaxed situations, Type A persons _____ (differ/do not differ) from Type B persons in measures of physiological reactivity.
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:
    a. _____
    b. _____
    c. _____

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.

PROGRESS TEST 1

Circle your answers to the following questions and check them with the answers beginning on page 373. If your answer is incorrect, read the explanation for why it is incorrect and then consult the appropriate pages of the text (in parentheses following the correct answer).

1. Behavioral and medical knowledge about factors influencing health form the basis of the field of:
   a. health psychology.
   b. holistic medicine.
   c. behavioral medicine.
   d. osteopathic medicine.