

Stress and Illness

Stress: Some Basic Concepts

Objective 12-15: Identify events that provoke stress responses, and describe how we respond and adapt to stress.

have _____ (only negative/both positive and negative) effects, depending on how they are perceived.

STUDY TIP/APPLICATION: The words *stress* and *stressor* are so similar it's easy to think that they mean the same thing. To understand the difference, remember that *stress* is the process by which we appraise and cope with challenging environmental events (the *stressors*). But they are different concepts describing different aspects of a behavior. It may help you to see the difference between these concepts if you realize that stressors can be external events, such as having your flight cancelled, or internal events, such as worrying about an upcoming term paper assignment, and that stress includes those events plus your response to them. To make sure you understand the differences between stress and stressors, see if you can come up with examples of each as you complete the following chart. The first example has already been filled in.

1. Stress is not merely a _____ or a _____. Rather, it is the _____ by which we perceive and respond to environmental threats and challenges. The threat or challenge is the _____, and our physical and emotional response is the _____.
2. This definition highlights the fact that stress arises less from the events than from how we _____ them and that stressors can _____.

3. Stressor (Stressful Event)	Appraisal		Response	
	Threat	Challenge	Threat	Challenge
Getting cut off by a driver on the freeway	"I'm going to be in an accident"	"I need to watch more carefully"	Heart races; hit the brakes hard	Heart races; swerve out of the way

4. Catastrophic events, such as floods, hurricanes, and fires, usually result in significant damage to _____ and _____ health.
5. Research studies have found that people who have recently been widowed, fired, or divorced are _____ (more/no more) vulnerable to illness than other people.
6. Another source of stress comes from _____, such as rush-hour traffic and family frustration. The stresses that accompany poverty and unemployment, for example, often compounded by _____, drive up _____ levels among African-Americans.
7. In the 1920s, physiologist _____ 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 _____.
8. 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 _____.

9. In studying animals' reactions to stressors, Hans Selye referred to the bodily response to stress as the _____.
10. 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.
11. This is followed by the stage of _____, in which the body's resources are mobilized to cope with the stressor.
12. If stress continues, the person enters the stage of _____. During this stage, a person is _____ (more/less) vulnerable to disease.
13. One study found that women who suffered enduring caregiver stress had especially short _____, which are pieces of _____ at the ends of _____ that are important in allowing cells to _____.
14. A common response to stress among women has been called _____, which refers to the increased tendency to _____. This tendency in women may in part be due to _____, a stress-moderating hormone.

APPLICATIONS:

15. Each semester, Bob does not start studying until just before midterms. Then he is forced to work around the clock until after final exams, which makes him sick, probably because he is in the _____ phase of the _____.
 - a. alarm; general adaptation syndrome
 - b. resistance; general adaptation syndrome
 - c. exhaustion; general adaptation syndrome
 - d. depletion; general adaptation syndrome

16. Connie complains to the campus psychologist that she has too much stress in her life. The psychologist tells her that the level of stress people experience depends primarily on
 - a. how many activities they are trying to do at the same time.
 - b. how they appraise the events of life.
 - c. their physical hardiness.
 - d. how predictable stressful events are.
17. Karen and Kyumi attend different universities, but both have rooms in on-campus dorms. Karen's dorm is large, roomy, with only two students to a suite. Kyumi attends a city school, where the dorms are small, overcrowded, and noisy, with five students to a room, which makes study very difficult. Which student is probably under more stress?
 - a. Karen
 - b. Kyumi
 - c. There should be no difference in their levels of stress.
 - d. It is impossible to predict stress levels in this situation.

Stress and Vulnerability to Disease

Objective 12-16: Describe how stress makes us more vulnerable to disease.

18. The field that integrates behavioral and medical knowledge relevant to health and disease is _____. The subfield of psychology that contributes to behavioral medicine is called _____. Another subfield, _____, focuses on mind-body interactions. This field investigates how _____ and _____ systems together affect the immune system and health.
19. 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.

20. Two other immune agents are the _____, which pursues and ingests foreign substances, and _____ cells, which pursue diseased cells.
21. Responding too strongly, the immune system may attack the body's tissues and cause an _____ reaction or a _____ disease, such as lupus. _____ (Women/Men) are the immunologically stronger gender, which makes them _____ (more/less) susceptible to the latter.
22. Or the immune system may _____, allowing a dormant herpes virus to erupt or _____ cells to multiply.
23. 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 and making us more vulnerable to disease.
24. Worldwide, the sixth leading cause of death is _____, caused by the _____, which is spread primarily through the exchange of _____ and _____.
25. Stressful life circumstances _____ (have/have not) been shown to accelerate the progression of this chronic disease.
26. Educational initiatives, support groups, cognitive therapy, and other efforts to control stress _____ (have/have not) been shown to have positive consequences on HIV-positive individuals.
27. Stress _____ (does/does not) create cancer cells. However, some studies find that people are at increased risk for cancer within a year after experiencing _____, _____, or _____.

28. When rodents were inoculated with _____ cells or given _____, tumors developed sooner in those that were also exposed to _____ stress.

APPLICATIONS:

29. A white blood cell that matures in the thymus and that attacks cancer cells is
 a. a macrophage. c. a T lymphocyte.
 b. a B lymphocyte. d. any of these cells.
30. When would you expect that your immune responses would be WEAKEST?
 a. during summer vacation
 b. during exam weeks
 c. just after receiving good news
 d. Immune activity would probably remain constant during these times.

Objective 12-17: Explain why some of us are more prone than others to coronary heart disease.

31. The leading cause of death in the United States is _____ . List several risk factors for developing this condition: _____
32. Friedman, Rosenman, and their colleagues 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.

33. The Type A characteristic that is most strongly linked with coronary heart disease is _____, especially _____.
34. When a _____ (Type A/Type B) person is angered, bloodflow 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.
35. People with the _____ personality type suppress their _____ (positive/negative) emotions to avoid _____.
36. Another toxic emotion is _____; researchers have found that _____ are more than twice as likely to develop heart disease as _____.
37. Depression _____ (increases/has no effect on) one's risk of having a heart attack or developing other heart problems.
38. Heart disease and depression may both result when chronic _____ triggers persistent _____.
- APPLICATION:**
39. Jill is an easygoing, noncompetitive person who is happy in her job and enjoys her leisure time. She would PROBABLY be classified as
- Type A.
 - Type B.
 - Type D.
 - There is too little information to tell.
- SECTION REVIEW:**
40. Researchers Friedman and Rosenman refer to individuals who are very time-conscious, supermotivated, verbally aggressive, and easily angered as
- ulcer-prone personalities.
 - cancer-prone personalities.
 - Type A.
 - Type B.
41. During which stage of the general adaptation syndrome is a person especially vulnerable to disease?
- alarm reaction
 - stage of resistance
 - stage of exhaustion
 - stage of adaptation
42. The leading cause of death in the United States is
- lung cancer.
 - AIDS.
 - coronary heart disease.
 - alcohol-related accidents.
43. Stress has been demonstrated to place a person at increased risk of
- cancer.
 - progressing from HIV infection to AIDS.
 - bacterial infections.
 - all of these conditions.
44. *Stress* is defined as
- unpleasant or aversive events that cannot be controlled.
 - situations that threaten health.
 - the process by which we perceive and respond to challenging or threatening events.
 - anything that decreases immune responses.
45. Behavioral and medical knowledge about factors influencing health form the basis of the field of
- health psychology.
 - holistic medicine.
 - behavioral medicine.
 - osteopathic medicine.
46. In order, the sequence of stages in the general adaptation syndrome is
- alarm reaction, stage of resistance, stage of exhaustion.
 - stage of resistance, alarm reaction, stage of exhaustion.
 - stage of exhaustion, stage of resistance, alarm reaction.
 - alarm reaction, stage of exhaustion, stage of resistance.
47. AIDS is a disorder that causes a breakdown in the body's
- endocrine system.
 - circulatory system.
 - immune system.
 - respiratory system.

48. *Tend and befriend* refers to
- the final stage of the general adaptation syndrome.
 - the health-promoting impact of having a strong system of social support.
 - an alternative to the fight-or-flight response that may be more common in women.
 - the fact that spiritual people typically are not socially isolated.
49. Which of the following statements concerning Type A and Type B persons is true?
- Even when relaxed, Type A persons have higher blood pressure than Type B persons.
 - When stressed, Type A persons redistribute bloodflow to the muscles and away from internal organs.
 - Type B persons tend to suppress anger more than Type A persons.
 - Type A persons tend to be more outgoing than Type B persons.
50. The disease- and infection-fighting cells of the immune system are
- B lymphocytes.
 - T lymphocytes.
 - macrophages.
 - all of these types of cells.
51. Which of the following is true of Type D personalities?
- They have reactive personalities and anger easily.
 - They suppress negative emotions to avoid social disapproval.
 - They are relaxed and easygoing.
 - They are competitive and hard-driving.
52. One effect of stress on the body is to
- suppress the immune system.
 - facilitate the immune system response.
 - increase disease resistance.
 - increase the growth of B and T lymphocytes.
53. Compared with men, women
- have stronger immune systems.
 - are less susceptible to infections.
 - are more susceptible to self-attacking diseases such as multiple sclerosis.
 - have all these characteristics.
54. Allergic reactions and self-attacking diseases are caused by
- an overreactive immune system.
 - an underreactive immune system.
 - the presence of B lymphocytes.
 - the presence of T lymphocytes.
55. Research on cancer patients reveals that
- stress affects the growth of cancer cells by weakening the body's natural resources.
 - patients' attitudes can influence their rate of recovery.
 - cancer occurs slightly more often than usual among those widowed, divorced, or separated.
 - all of these statements are true.
56. The component of Type A behavior that is the most predictive of coronary disease is
- time urgency.
 - competitiveness.
 - high motivation.
 - anger.
57. The field of psychoneuroimmunology is concerned with
- thoughts and feelings.
 - the brain.
 - the endocrine system.
 - all of these things.

TERMS AND CONCEPTS TO REMEMBER:

- stress
- general adaptation syndrome (GAS)
- tend and befriend
- health psychology
- psychoneuroimmunology
- coronary heart disease
- Type A
- Type B

Health and Coping

Coping With Stress

Objective 12-18: Identify two ways that people try to alleviate stress.

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.

STUDY TIP/APPLICATION: Two basic strategies for coping with stressors are problem-focused coping and emotion-focused coping. *Problem-focused coping* is an action-oriented strategy in which we attempt to reduce stress by changing the stressor or the way we interact with that stressor. In contrast, with *emotion-focused coping* we focus on our feelings and try to change how we think about stressors. Think about how you typically cope with stress. Do you more often rely on problem-focused coping or emotion-focused coping? Now complete the chart on the next page. For each stressor, write down one example of a problem-focused strategy and one example of an emotion-focused strategy.

5. Stressor	Emotion-Focused Strategy	Problem-Focused Strategy
You are worried about the amount of reading needed to prepare for an exam.	To take your mind off things, you go to a movie.	You divide the reading into manageable, daily sessions, and get started!
a. You get into an argument with your roommate.		
b. Your car muffler falls off.		
c. You develop a cold sore on your lip the day of an important dance.		

APPLICATIONS:

6. Velma has been unable to resolve a stressful relationship with a family member. To cope, she turns to a close friend for social support. Velma's coping strategy is an example of
- problem-focused coping.
 - emotion-focused coping.
 - managing rather than coping.
 - self-control.
7. To help him deal with a stressful schedule of classes, work, and studying, Randy turns to a regular program of exercise and relaxation training. Randy's strategy is an example of
- problem-focused coping.
 - emotion-focused coping.
 - managing rather than coping.
 - self-control.

Objective 12-19: Explain how a perceived lack of control affects health.

8. Negative situations are especially stressful when they are appraised as _____.
9. Seligman found that exposure to inescapable punishment produced a passive resignation in behavior, which he called _____. Perceiving a loss of _____, humans become more vulnerable to ill health.
10. With higher economic status comes lower risks of infant _____, low _____, smoking, and _____.
11. 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 _____.
12. Ever-increasing choice _____ (does/does not) lead to ever-greater happiness levels. Information overload and lower satisfaction can result from what has been called a _____.
13. Individuals who have an _____ _____ perceive that chance or outside forces control their fate. People who perceive

an _____ believe they control their own destiny.

14. Research studies demonstrate that people who perceive an _____ (internal/external) locus of control achieve more in school and work, feel less _____, and enjoy better _____.

Objective 12-20: Describe how our self-control can be depleted, and explain why it is important to build this strength.

15. Self-control is the ability to control _____ and delay _____ for longer-term rewards.
16. Research studies demonstrate that self-control is associated with _____.
17. Our self-control is _____ (stable/constantly changing).
18. Exercising willpower _____ (increases/decreases) neural activation in brain regions associated with mental control. Sugar has the _____ (same/opposite) effect.
19. Developing self-discipline in one area of life may _____ into other areas as well.

Objective 12-21: Describe how an optimistic outlook affects health and longevity.

20. People who have an optimistic outlook on life expect to have more _____, to _____ better with stressful events, and to enjoy better _____.
21. Optimists respond to stress with smaller increases in _____, and recover more _____ (quickly/slowly) from heart bypass surgery.
22. Optimistic students tend to get better _____.

23. Studies of identical twins reveal that optimism _____ (runs/does not run) in families.
24. One genetic marker of optimism is a gene that enhances the hormone _____.
25. People _____ (can/cannot) learn to become more optimistic.

Objective 12-22: Describe how social support promotes good health.

26. Another buffer against the effects of stress is _____ support.
27. People whose marriages are characterized by low levels of _____ live longer, healthier lives than people who are _____.
28. Longitudinal research reveals that a _____ at age 50 predicts healthy aging better than _____ at the same age.

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

29. Some research studies suggest that the presence of _____ may help some people handle stress.
30. James Pennebaker has found that emotional _____ can adversely affect our physical health.
31. Health can be improved by _____ about personal traumas in a diary. 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.

APPLICATIONS:

32. You have just transferred to a new campus and find yourself in a potentially stressful environment. According to the text, which of the following would help you cope with the stress?
 - a. believing that you have some control over your environment
 - b. having a friend to confide in
 - c. feeling optimistic that you will eventually adjust to your new surroundings
 - d. All of these behaviors would help.
33. Which of the following would be the best piece of advice to offer a person who is trying to minimize the adverse effects of stress on his or her health?
 - a. "Avoid challenging situations that may prove stressful."
 - b. "Learn to play as hard as you work."
 - c. "Maintain a sense of control and a positive approach to life."
 - d. "Keep your emotional responses in check by keeping your feelings to yourself."

Reducing Stress

Objective 12-23: Discuss the effectiveness of aerobic exercise as a way to manage stress and improve well-being.

34. Sustained exercise that increases heart and lung fitness is known as _____ exercise.
35. Exercise helps fight heart disease by increasing _____ and lowering _____.
36. Aerobic exercise can also reduce _____, _____, and _____.
37. Exercise increases the body's production of mood-boosting neurotransmitters such as _____, _____, and the _____. It also may foster _____.



Objective 12-24: Describe the ways in which relaxation and meditation might influence stress and health.

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

38. 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 monitoring physiological responses. Current research indicates that this method works best on _____.
39. Simple relaxation procedures have been shown to help alleviate _____, _____, and _____.
40. Many stress management programs today are built around _____, in which a person learns to relax and silently attend to his or her inner state, without _____ it.

State some of the benefits of mindfulness meditation.

APPLICATION:

45. Concluding her presentation on spirituality and health, Maja notes that
 - a. historically, religion and medicine joined hands in caring for the sick.
 - b. religious involvement predicts health and longevity.
 - c. people who attend religious services weekly have healthier lifestyles.
 - d. all of these statements are true.

SECTION REVIEW:

41. Mindfulness strengthens connections in regions of the brain associated with _____.
42. When labeling emotions, "mindful people" show less activation in the _____, and more activation in the _____.
43. Brain scans of experienced meditators reveal decreased activity in the _____ lobe and increased activity in the _____ lobe.

Objective 12-25: Describe the faith factor, and offer some possible explanations for the link between faith and health.

46. Attempting to alleviate stress directly by changing a stressor or how we interact with it is an example of
 - a. problem-focused coping.
 - b. emotion-focused coping.
 - c. managing rather than coping with stress.
 - d. self-control.
47. A study in which Holocaust survivors spent time recalling their experiences found that
 - a. most did not truthfully report feelings and events.
 - b. all survivors experienced a sustained increase in blood pressure until they finished talking about their experiences.
 - c. those who were most self-disclosing later had the most improved health.
 - d. all the survivors denied undergoing concentration camp horrors.

44. Several recent studies demonstrate that religious involvement _____ (predicts/does not predict) health and longevity.

48. Which of the following was NOT mentioned in the text as a potential health benefit of exercise?
- Exercise can increase ability to cope with stress.
 - Exercise can lower blood pressure.
 - Exercise can reduce stress, depression, and anxiety.
 - Exercise improves functioning of the immune system.
49. Social support _____ our ability to cope with stressful events.
- has no effect on
 - usually increases
 - usually decreases
 - has an unpredictable effect on
50. Research has demonstrated that as a predictor of health and longevity, religious involvement
- has a small, insignificant effect.
 - is more accurate for women than men.
 - is more accurate for men than women.
 - equals nonsmoking and exercise.
51. Which of the following was NOT suggested as a possible explanation of the faith factor in health?
- Having a coherent worldview is a buffer against stress.
 - Religious people tend to have healthier lifestyles.
 - Those who are religious have stronger networks of social support.
 - Because they are more affluent, religiously active people receive better health care.

TERMS AND CONCEPTS TO REMEMBER:

52. coping
53. problem-focused coping
54. emotion-focused coping
55. learned helplessness
56. external locus of control
57. internal locus of control
58. self-control
59. aerobic exercise

Essay Question

Discuss several factors that enhance a person's ability to cope with stress. (Use the space below to list the points you want to make, and organize them. Then write the essay on a separate sheet of paper.)