

Stress and Health

In this chapter, you will learn about:

- causes, effects, and ways of coping with stress
- behaviors that promote health
- behaviors that endanger health

Your teacher announces that each person in the class is responsible for designing and leading a class activity related to healthy living. How do you feel about the task—challenged or threatened? Any type of change is a stressor—a factor that may produce a stress reaction, such as increased heart rate, nervousness, or anxiety. People cope with stress in different ways—actively or defensively.

Health involves a complex balance among the brain, mind, and immune system. Medical diagnoses now take into account information about lifestyle and social relationships in addition to physical symptoms as doctors are influenced by the biopsychosocial model of medicine.

Some people, particularly those who have a genetically low tolerance for stress, may engage in negative behaviors, such as substance abuse, aggression, or self-deception. These negative behaviors may actually increase stress.

What Is Stress?

The word *stress* can be used in several ways. Rather than defining stress in general, let's separate its meanings by using the following terms:

- * **Stressor** describes an event or circumstance that produces change in a person's internal or external environment. "My job is so stressful" identifies a stressor—in this case someone's job that causes stress.
- * **Stress reactions** are the physical and psychological responses of the body and mind to stressors. "I'm so stressed out" describes a reaction to stress.

Stress Involves Change

A stressor is any physical or environmental change, real or imagined, to which you are exposed. Hosting a party, getting a poor grade on a test, having a fight with your best friend, catching a cold, or getting a promotion at work are all stressors. Each may produce a stress reaction.

Although we generally think of stress as something to be avoided, the fact is that not all stressors are bad; nor is all stress damaging to your health or sense of well-being. The physiological changes accompanying the challenge of a new job or anticipation over an upcoming move may increase motivation or make you more alert. This "good stress" is called **eustress**.

Some people thrive on changes in their lives; they're always looking for new challenges. Others become a "basket case" at the mere thought of changing some part of their routine.

Inherited tendencies, psychological coping mechanisms, and one's social support system are all factors in how a person handles stress. Further, unrelated stressors occurring at the same time may combine to produce stress in even the most "laid-back" person.

Types of Stressors

Stressors include daily hassles, minor and major life changes, and unexpected disasters or catastrophes.

Stressors
Daily Hassles
Physical hassles, such as noise, air pollution, weather extremes, overcrowding, an annoying commute, or a temporary illness. Mental factors, such as worry about one's job, finances, relationships, responsibilities to family.
Minor Changes
Changes that may not seem stressful, but that alter the pattern of life: moving, graduation, change of grade in school, new family members, or a change in one's job.
Major Changes
Marriage, separation or divorce, a chronic or major illness, loss of one's job, alcohol or drug abuse, serious financial difficulties, serious conflicts with employer or family member.
Disasters/Catastrophes
Natural disasters, such as fire or flood, loss of home, death of a loved one, a major or life-threatening illness in self or a loved one, serious accident.

Physiological Responses to Stress

In the 1920s, American physiologist Walter Cannon reaffirmed that responses to stress are the result of the interaction of mind and body. That is, both physical and emotional or psychological stressors produce much the same biological responses—namely, a release of epinephrine (adrenaline) and nor-epinephrine (noradrenaline). These stress hormones enter the bloodstream and prepare an individual for what Cannon called “fight or flight.” Cannon pointed out that being prepared to escape from or respond to a potential threat was an adaptive behavior.

General Adaptation Syndrome (GAS)

Canadian scientist Hans Selye spent 40 years researching animals’ reactions to various stressors, such as shock, surgical trauma, or restraint. He maintained that the body’s adaptive reaction to stress is similar regardless of the stressor—like a defensive posture that one might assume regardless of the nature of the threat. He called the response the **general adaptation syndrome (GAS)**.

Selye proposed that GAS has **three** phases:

1. Alarm.
2. Resistance.
3. Exhaustion.

How GAS Works

Imagine that you’ve just discovered that a loved one has a life-threatening illness. At first, you feel anxiety and concern—alarm. When the worst happens and the person actually dies, you experience grief and feel depressed. You feel tired all the time and have to force yourself to move through the days following the death—resistance. After dealing with the funeral and the concerns of family members during the mourning period, you feel drained of energy—exhaustion. If you try to continue to carry on without giving your body and mind time to recover, you may become seriously ill yourself.

Psychological Responses to Stress

How do you know that you are stressed? Our perception of stress is a combination of the biological reactions discussed above and various psychological responses.

- * The flood of hormones in the alarm (“fight or flight”) phase of stress is accompanied by feelings of fear or anxiety.
- * In the resistance phase, people may experience forgetfulness, irritability, anger, guilt, poor concentration, low motivation, low productivity, mood swings, and other negative states that may, in turn, produce even more stressors.
- * During the exhaustion stage, depression and withdrawal may occur. Some people exhibit irrational behavior and may abuse alcohol or drugs.

Cognitive Effects of Stress

The optimal level of stress appears to vary from individual to individual. The heightened response to stressors is sometimes called arousal. The **Yerkes-Dodson Law** describes the relationships among the level of arousal, performance, and task difficulty.

Think about how you feel as you are about to take a test. Your attitude may vary between ho-hum and excessive concern and anxiety. Your performance on the test will be best if your attitude lies somewhere in between those extremes—that is, if you are sufficiently “up” for the test, but not overly concerned. This optimal level of arousal varies inversely with the difficulty of the task. Because a high arousal level makes concentration difficult, you would tend to do better on a more difficult test with a lower arousal level.



Factors That Influence Stress

A number of factors affects the way in which you respond to stressors:

- * **Personality.** Openness to new experience is a major personality trait. Some people perceive change as a challenge—others as a threat. People who tend to see change as a threat are more likely to experience negative stress responses.
- * **Stress Tolerance.** About 10 percent of the population inherits low stress tolerance—the inability to deal with stress that most people handle with few or no problems.
- * **Perception of Control.** Some people become overwhelmed by the irritations of daily life because they believe these factors to be out of their control. Others *choose* the things that they allow to “get to them.” The more control one perceives in a situation, the healthier one’s response to stressors.
- * **Self-Efficacy.** People who believe themselves capable of achieving what they set out to do are less affected by stressors. Research has shown that self-confidence actually reduces adrenaline levels in the bloodstream in potentially threatening situations.
- * **Social Support.** People with supportive family and friends tend to be less affected by stressful situations.

What's Your Stress Level?

Think about the last 12 months of changes in your life. Identify each stressor in the table below that you've experienced and then add up their values. If you've experienced total stress within the last 12 months of 250 or

greater, even with normal stress tolerance, you may be overstressed. Persons with low stress tolerance may be overstressed at levels as low as 150. This scale was first proposed in 1967. What types of modern stressors might be added to the scale?

Stress Scale for Youth	
Stressor	Event Values
1. Death of parent, boyfriend/girlfriend	100
2. Divorce (of yourself or your parents)	65
3. Puberty	65
4. Pregnancy (or causing pregnancy)	65
5. Marital separation or breakup with boyfriend/girlfriend	60
6. Jail term or probation	60
7. Death of other family member (other than spouse, parent, or boyfriend/girlfriend)	60
8. Broken engagement	55
9. Engagement	50
10. Serious personal injury or illness	45
11. Marriage	45
12. Entering college/beginning next level of school (starting junior high or high school)	45
13. Change in independence or responsibility	45
14. Any drug and/or alcohol use	45
15. Getting fired at work or expelled from school	45
16. Change in alcohol or drug use	45
17. Reconciliation with mate, family, or boyfriend/girlfriend (getting back together)	40
18. Trouble at school	40
19. Serious health problem of a family member	40
20. Working while attending school	35
21. Working more than 40 hours per week	35
22. Changing course of study	35

Stress Scale for Youth (continued)

Stressor	Event Values
23. Change in frequency of dating	35
24. Sexual adjustment problems (confusion of sexual identity)	35
25. Gain of new family member (newborn baby or parent remarries)	35
26. Change in work responsibilities	35
27. Change in financial state	30
28. Death of a close friend (not a family member)	30
29. Change to a different kind of work	30
30. Change in number of arguments with mate, family, or friends	30
31. Sleeping less than eight hours per night	25
32. Trouble with in-laws or boyfriend's or girlfriend's family	25
33. Outstanding personal achievement (awards, grades, and so forth)	25
34. Mate or parents start or stop working	20
35. Beginning or ending school	20
36. Change in living conditions (visitors in the home, remodeling house, change in roommates)	20
37. Change in personal habits (start or stop a habit, such as smoking or dieting)	20
38. Chronic allergies	20
39. Trouble with the boss	20
40. Change in work hours	15
41. Change in residence	15
42. Changing to a new school (other than graduation)	10
43. Presently in premenstrual period	15
44. Change in religious activity	15
45. Going in debt (you or your family)	10
46. Change in frequency of family gatherings	10
47. Vacation	10
48. Presently in winter holiday season	10
49. Minor violation of the law	5
Total score =	

Conflict

One of the major stressors is conflict—feeling pressures from opposing forces or motives. Psychologists describe four different types of conflict.

Stress is greatest when motives are the strongest, such as when there are conflicting moral or ethical questions.

Types of Conflict	
Approach-Approach Conflict	A conflict in which both choices have a positive outcome. Should you go to a movie or to a party with friends? Even after you decide, you'll feel stress until you're sure the choice worked out for the best.
Avoidance-Avoidance Conflict	A conflict where neither choice is particularly appealing. Your boss wants you to work this Saturday night. If you stay at home, your parents want you to baby-sit your little sister.
Approach-Avoidance Conflict	Choices have both good and bad outcomes. Should you agree to tutor your little sister in math on Saturday mornings? You don't want to give up that free time, but it makes you feel good to help her.
Multiple Approach-Avoidance Conflict	Among several alternatives, each has advantages and disadvantages. How will you spend your time after school? Try out for a sport and commit to practice every day? Get a part-time job? Leave the time free in case something comes along that you want to do? Each choice has a positive and a negative outcome.

Coping with Stress

While eustress, or good stress, can add anticipation and excitement to life, even enjoyable changes can eventually build to the point where they can threaten health. When a person is exposed to stressors to the point where he or she begins to experience negative physiological and psychological effects, he or she is overstressed. How does one cope with **overstress**?

Active coping can be an effective way to manage stress. With **active coping**, you can choose behaviors that support health, such as good nutrition, exercise, relaxation, and meditation. Here are **six** specific ways you can use active coping.

1 Be Aware

Before you can cope with stress, you must be aware of it. The first important coping strategy is simply to notice what factors in your life strongly affect your emotional and physical reactions—your stressors.

The word *distress* comes from Latin words meaning “to stretch apart.” Allowing yourself to “stretch apart” too far may cause you to snap. Don't ignore your distress—your responses to stressors. Acknowledge them. Ask “What am I telling myself about the meaning of these events?” For example, what do good grades, lots of friends, or a well-paying job *mean* in terms of your life or self-image? Often stress reactions are caused because we give too much importance to events.

2 Make Changes

Recognize what you can change and what you can't. Which of your stressors can you avoid or eliminate from your life? Can you reduce the intensity of the stressor by better planning of your time? What kind of time and energy would be required to make changes in your life that would reduce or eliminate some of your stressors? Are you willing to make those changes?

3 Take Control

Take control over your stressors. Decide which of the factors that produce stress are valuable to you and which aren't. For example, holding on to anger or resentment against a person or situation occupies a portion of your brain and produces stress. It is your choice whether to allow that person or situation control over part of your brain.

Do you tend to overestimate the importance of situations? Do you think that you have to please everyone? Do you tend to overreact or insist on "winning" in everything you do? Those reactions are within your control once you become aware of them and analyze their effects on your stress level.

4 Moderate

Learn to moderate your physiological reactions to stress. Learn and use relaxation techniques, such as slow, deep breathing and deliberate release of muscle tension. You can even learn to control your heart rate and blood pressure with training.

5 Take Care of Yourself

You can maintain your physical reserves by:

- * Exercising regularly.
- * Eating well-balanced, nutritious meals.
- * Maintaining your ideal weight.
- * Avoiding stimulants such as nicotine and caffeine.
- * Taking periodic breaks.
- * Getting enough sleep.

You can maintain your emotional reserves by:

- * Developing mutually supportive friendships and relationships.
- * Pursuing realistic goals that are meaningful to you, rather than goals set by others.
- * Expecting and responding calmly to some frustrations, setbacks, or sorrows.
- * Caring about and for yourself.
- * Laughing!

6 Get Help

If you feel overwhelmed by your responses to stress and are unable to make the necessary changes yourself, get help! You're not alone. Stress-related disorders, including both physical and psychological issues, account for 60 to 90 percent of office visits to health-care professionals.

A health-care professional can teach you ways to cope with various kinds of stress and can help you to understand why certain events are stressors for you but not for others. Getting help with problems is a wise choice when you are so caught up in feelings of stress or anxiety that you can't think as clearly as you are able.

The Psychology of Health

For many years, an illness for which a doctor couldn't find a cause was termed *psychosomatic*—an illness caused or aggravated by some psychological factor. Some sufferers pegged it a polite term for “It’s all in your head.” Although the person actually experienced symptoms, they were often considered less important than “real” symptoms for which “real” causes—

such as bacteria, viruses, or failure of body systems—could be found.

Today, a new field of study known as *psychoneuroimmunology* (PNI) is emerging.

What Is PNI?

Psychoneuroimmunology is a field of study based on research showing that the brain, the hormone-producing endocrine system, and the immune system are all linked together by “messenger molecules.” Researcher Candace Pert calls these molecules *neuropeptides*, or “information substances.”



Stress, Health, and Humor

You’ve seen how stress can affect heart rate, breathing, and blood pressure. Many studies also demonstrate that stress can negatively influence the immune system. But now, research shows, laughter may indeed be the best medicine.

In a 1990 study of college students, Herbert Lefcourt and his colleagues measured levels of a specific chemical in saliva—one indicator of a healthy immune system response. He also measured the students’ ability to respond with humor in various situations and the likelihood they would use humor in stressful situations.

Lefcourt found higher levels of the chemical in students who had been exposed

to a humorous video versus a control group who had experienced a regular class. Levels were even higher in those students who tended to use humor when stressed.

In more recent research, Lefcourt has found that women who intentionally use humor as a means of coping with stress have lower blood pressure than those who don’t. The results are opposite for men. Lefcourt hypothesizes that women tend to make fun of themselves in response to stress, thereby relieving tension. Men tend to make fun of others—a method of maintaining position in the social hierarchy, but one that may actually increase stress.



In her book, *Molecules of Emotion*, Pert describes PNI as the study of a bodywide communications system that regulates our physical, psychological, and emotional health. The importance of one's psychological state to one's biological health can no longer be disputed as studies demonstrate the correlation between anger and arthritis, between stress and high blood pressure, and between cancer and "taking control of one's life."

A New Approach to Health

Today, when a person trains to be a doctor, that training is likely to be based on a **biopsychosocial model** of health. This model acknowledges that a person's body, mind, and social environment all play a part in maintaining good health or succumbing to illness and disease.

When a doctor interviews a patient, questions now extend far beyond physical symptoms. They include potential stress factors in the person's life, lifestyle, and information about the person's family, friends, and relationships.

Stress and the Immune System

The **immune system** is a complex system that defends the body from the attacks of bacteria, viruses, and other foreign substances.

When the brain produces stress hormones, the number of disease-fighting cells in the immune system is reduced. Findings from studies related to the immune system reveal the effects of stress:

- * When exposed to a cold virus, almost double the number of people leading stress-filled lives developed colds than those who reported low stress levels.
- * The immune systems of *Skylab* astronauts were depressed following the stress of reentry and splashdown.
- * Stress due to exams lowers the immune system's response to certain viruses, such as Epstein-Barr.
- * Depression and grief tend to lower immune system responses.

The Relationship of Stress and Illness

This table shows how stress is related to the development and progress of a few significant illnesses. It is often possible to take control of many of the psychological stressors.

Stress and Illness			
Illness	Physiological Symptoms and Causes	Psychological Factors	Treatments
Headaches	<ul style="list-style-type: none"> * Muscle tension. * Increased blood pressure. * Change in size of blood vessels in the head, which compresses nerve endings and produces pain. 	<ul style="list-style-type: none"> * Stress may produce muscle contraction and increased blood pressure. * Pain causes stress. 	<ul style="list-style-type: none"> * Progressive relaxation and biofeedback may reduce both stress and physiological factors. * Medication generally blocks pain receptors.
Cancer	<ul style="list-style-type: none"> * Rapid and atypical growth of abnormal cells * Abnormal cells develop in everyone, but are generally disposed of by the immune system. * Risk factors include environmental pollutants and some behaviors, such as sunbathing, smoking, and a diet high in fat and low in fruits and vegetables. 	<ul style="list-style-type: none"> * Stress, anxiety, and depression reduce immune system efficiency, allowing the growth of cancerous cells. * Being diagnosed with cancer increases stress. * Behaviors that increase risk are often a matter of choice and/or habit and can be changed. 	<ul style="list-style-type: none"> * Some cancer patients have found that actively taking control of their lives leads to remission. * Social support from family, friends, and particularly from others who share the illness has been shown to have positive effects.
Heart Disease	<ul style="list-style-type: none"> * People with a family history of heart disease have a greater risk of developing the disease. * Risks include obesity, high cholesterol, high blood pressure, and lack of exercise; and behaviors such as smoking, heavy drinking, and unhealthy eating habits. 	<ul style="list-style-type: none"> * Risks include intense or driven personality type; tendency toward anger and hostility; strain and frustration from work, financial, family situation; any high-level stressor(s) with which a person doesn't adequately cope. 	<ul style="list-style-type: none"> * Although surgical and medical treatments are available, people suffering from heart disease often benefit from changes in unhealthy behaviors and the addition of healthy behaviors.

The Chemistry of Stress

The body's complex chemical systems contain messenger molecules, some of which make you feel "up" and others that calm and quiet you. When life is running smoothly, messages from the two types of chemicals are in balance. But when serious stressors are present, the production of "up" molecules—serotonin, noradrenaline, and dopamine—is reduced and the balance is disrupted. Let's take a closer look at these molecules.

Serotonin is critical in the healthy functioning of your body clock. When you feel stressed, your body produces cortisol, a hormone that prepares your body for battle. As serotonin increases and you move into the sleep cycle, the amount of cortisol produced normally drops and you can rest. Because serotonin is one of the first chemicals to be affected by stress, an inability to sleep is often the first symptom of over-stress. Cortisol levels remain high, and your body has no time to "come down" from its alert state.

Noradrenaline sets your body's energy level. Without sufficient noradrenaline, you feel exhausted and tired all the time—unwilling to do much of anything.

Dopamine is the brain's natural pleasure/pain regulator. It regulates the release of endorphins—chemicals that help us to control our response to pain as well as to feel good about our lives. When stress depletes the dopamine function, we not only are more sensitive to pain, but we don't derive much pleasure from things that are normally pleasurable.

Behaviors That Support Health

PNI studies suggest that the body and mind constantly strive for balance. If the behaviors that we choose support that balance, our chances for a healthy life are enhanced. Behaviors that support balance include:

- * Eating well-balanced and nutritious meals that are low in cholesterol and fat, contain vitamins and minerals that contribute to the body's chemical balance, and do not exceed the demands of the body's metabolism.
- * Engaging in regular exercise to regulate weight and metabolism.
- * Avoiding toxins in the atmosphere, especially smoking.
- * Reducing stress through positive coping mechanisms such as relaxation and meditation; recognizing, analyzing, and dealing with stressors; and working to change compulsive or negative behaviors.
- * Developing a strong social support system.

Unhealthy Behaviors

Not all methods that people use to cope with stress are healthy. **Defensive coping** involves reducing stress through:

- * **Avoidance:** Withdrawing from a stressor because of fear or an inability to cope in any active way.
- * **Self-deception:** Lying to oneself about the seriousness of a situation.
- * **Aggression:** Taking out one's stress on another person, which often increases the stress.
- * **Substance Abuse:** Attempting to use drugs or alcohol to alter moods.

Mood-Altering Drugs

Drugs that people misuse to cope with stress fall into **three** categories:

1. Stimulants (“up” drugs).
2. Depressants (“down” drugs).
3. Hallucinogens.

Some substances may *temporarily* replace the “up” molecules, boost the body’s energy, help relieve aches and pains, or make a person feel better. They include:

- * **Caffeine:** The “wake-up” ingredient in coffee, cola, or a hit of chocolate.
- * **Alcohol:** Provides a *temporary* “fix” to problems of mood and inability to sleep; diminishes pain sensations and increases pleasure. Abusers use alcohol to fall asleep, to wake up, to feel more assertive, to feel more relaxed.
- * **Nicotine:** Another chemical that can both calm anxiety and reduce pain sensitivity, as well as boost alertness. Nicotine and other drugs alter the body’s own natural chemistry.
- * **The Body’s Own Adrenaline:** People who engage in high-risk or high-demand activities are often overstressed and are using their body’s own adrenaline to keep them “high.”
- * **Other Drugs:** Marijuana, cocaine, amphetamines, and heroin also temporarily replace the functions of the body’s natural “up” molecules.

The Down Side of “Up” Drugs

Using drugs to balance the body’s chemistry is, according to Dr. Steve Burns, like using a bulldozer to level the dirt in a flowerpot. There’s simply no control. All mood-altering drugs cause a condition known as *rebound*. The drug may make a person feel better quickly, but when it wears off, the user will feel bad just as quickly—the crash.

Just as the eyes adjust to an increased amount of light, the body adjusts to an increased amount of the drug. Some drugs work by reducing or increasing the amount of natural chemicals that the body produces. The body fights back—trying to rebalance a system that is even more out of balance. More of the drug is needed to get the same “up” feeling. Instead of regaining the balance of good health, the person hitches a ride on an emotional roller coaster whose hills get higher and whose valleys get deeper.

Drugs and Side Effects

Stimulants

Increase heart and breathing rates; diminish appetite, further throwing the body chemistry off.

Depressants

Suppress brain functions; reduce inhibition; slow reflexes; impair judgment.

Hallucinogens

Distort perception; may have unexpected, sometimes permanent psychological impact.



CRITICAL THINKING

How Should People Cope with Stress?

Various stressors affect each individual differently. It might then appear that different people would find different coping mechanisms useful. What is a negative mechanism for one person may work very well for another. What do you think works best?

THE ISSUES

Active coping involves changing circumstances, situations, and behaviors in your life to remove or lessen stress or to change your attitude toward it. Methods include:

- * Changing what you think by monitoring your “self-talk,” such as “I’m so stupid,” and changing it to “I blew that one, but I can do better the next time.”
- * Learning to use relaxation and meditation when stressed.
- * Changing your physiological state through exercise, which makes it difficult to “hold onto” stress.

Defensive coping involves reacting to stress rather than actively managing it. One might react by:

- * Taking a time out.
- * Holding back expression of angry or hurt feelings.
- * Eating a big slice of cake.
- * Denying that the stressor exists.

Sometimes active coping may not be effective and defensive mechanisms may be, at least temporarily, effective.

What are the advantages and disadvantages of active and defensive coping mechanisms? Under what circumstances might a person choose each of these mechanisms?

THE PROCESS

- 1 Restate the choices.** In your own words, state the difference between the choices.
- 2 Provide evidence.** From your own experience and from the information above, list the *advantages and disadvantages of active coping mechanisms*.
- 3 Give opposing arguments.** From your own experience and from the information above, list the *advantages and disadvantages of defensive coping mechanisms*.
- 4 Look for more information.** What else would you like to know about these coping mechanisms? Make a list of your questions. On the Internet, in the psychology section of the library, or in the index of psychology books, research *stress, coping mechanisms, and defensive mechanisms*.

- 5 Evaluate the information.** Make a chart with four columns:

Active		Defensive	
Adv.	Disadv.	Adv.	Disadv.

Record your thoughts in each column.

Under what circumstances might you choose defensive coping rather than active?

- 6 Draw conclusions.** Write one or two paragraphs that compare and contrast the advantages and disadvantages of active and defensive coping mechanisms. Under what circumstances might each be used? Be sure to state reasons, not just opinions.

Addictions

In addition to the roller coaster effect, many drugs are addictive. Addiction is a complex biopsychosocial issue. It often involves lasting changes in brain chemistry and structure. Critical changes in brain circuitry then affect the way we process information and the choices we have. Addictions add even more stressors to an already overstressed brain.

“Down” Drugs

When some people feel stress, they go to their doctors for medication to help them sleep and relax. These depressants include tranquilizers, such as Valium, and barbiturates. Although these “down” drugs affect the brain differently from the “up” drugs, users experience the same cycles of rebound and crash. Typically, the drugs only work for one to three months. By that time, quitting them can cause such severe withdrawal symptoms that a person finds it difficult to stop taking them even though they are not working.

Side Effects

In addition to rebound and adaptation, many drugs’ side effects add stressors of their own.

Health Management

Just as the immune system adapts to and protects us from environmental stressors, the mind must respond and adapt to psychological stressors. Both are defense systems, and failure in either system makes one vulnerable to attack.

If we are exposed to small amounts of a potential allergen over a long period of time, our immune system may learn to adapt to it or develop resistance against it. In the same way, if we learn to deal with the small stressors in our lives through active coping at an early age, they may not bother us as much in later life, or we may develop stronger resistance against them.

For most individuals health maintenance is certainly within their control—in terms of the healthy habits they develop and the ways in which they choose to deal actively and positively with potential stressors.



Chapter 15 Wrap-up

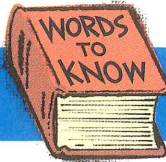
STRESS AND HEALTH

People feel stressed when the stressors in their lives exceed their ability to cope effectively with them. Stressors include daily hassles, frustrations, life changes, illness, grief, and changes in social relationships. About 10 percent of the population suffers from low stress tolerance—a genetic inability to deal with stressors that the rest of the population handles with relative ease.

Many major illnesses, such as cancer and heart disease, are related to stress. Good mental and physical health are the result of maintaining balance in nutrition, exercising, reducing stress with active stress coping mechanisms, and engaging in healthy behaviors.

Negative coping mechanisms—such as aggression, self-deceit, and substance abuse—often increase stressors and make a person even more vulnerable to illness.

Psychology



active coping—managing stress by choosing behaviors that support health. p. 254

biopsychosocial model—model that acknowledges a person's body, mind, and social environment all play a part in health. p. 257

defensive coping—managing stress through such behaviors as avoidance, self-deception, aggression, and substance abuse. p. 259

eustress—“good” stress that may increase anticipation or prepare one to meet a challenge. p. 249

general adaptation syndrome (GAS)—generalized response to stress consisting of alarm, resistance, and exhaustion. p. 250

immune system—complex system that defends the body from the attacks of bacteria, viruses, and other foreign substances. p. 257

overstress—condition in which a person begins to experience negative physiological and psychological effects of stress. p. 254

psychoneuroimmunology (PNI)—new field of study that recognizes links among the brain, the hormone-producing endocrine system, and the immune system. p. 256

stressor—event or circumstance that produces change in a person's internal or external environment. p. 249

stress reactions—physical and psychological responses of the body and mind to stressors. p. 249

Yerkes-Dodson Law—generalization that task difficulty and arousal interact such that low levels of arousal improve performance on difficult tasks; high levels of arousal improve performance on easy tasks. p. 251