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How angry do you get at work or school? Imagine you have to get your course's textbook and you have one hour for lunch and you've waited in line for 45 minutes and someone butts in front of you. Would you be angry? Then you rush to the cafeteria and they're going to close but you know that they haven't turned off the cash machines yet and they still won't let you buy the sandwich you want to purchase. Now are you angry? You get to your class and you find out that the instructor has changed the day of the final exam to coincide with a trip out of town that you've planned for over six months. Angry yet?

Like most people, we like to think of ourselves as rational, sensible, and calm. But the mounting tensions of our work environments sometimes take us right to the edge. And some people cross the line and engage in something called work rage. Take the case of Pierre LeBrun, who in April 1999 walked into his workplace at an Ottawa transit station and shot four co-workers before shooting himself. For LeBrun, there was a history of persistent taunting by co-workers about his stuttering. In response, he physically assaulted one co-worker. His employer handled the situation by moving him from one job to

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another without ever disciplining his co-workers. Eventually, LeBrun just couldn't take it anymore. (Adapted from Flavelle, 2000).

A similar event happened in June 1999 when Andrew Alan was stabbed when delivering a courier package. Although you would rarely consider delivering packages to be a life-threatening job, it is dangerous when you have to deal with others who might be engaging in road rage. Edmonton police suggest that Alan was the unfortunate victim of another driver's road rage while en route to his drop-off site. The charges against his alleged attacker were subsequently dropped ("Charge stayed," 2000).

All of the above share a common theme—*work rage*. Work rage involves all levels of violence from name-calling, to pushing and shoving, to murder. The violence can be against co-workers, customers, or management. Although Canadian statistics on workplace violence are not presently available, Ottawa is now collecting data. Early findings suggest that workplace conflict is on the rise. People who deal with the public, such as teachers and retail clerks, are at greatest risk. Intimidating managers pose the second greatest threat, followed by co-workers. Experts suggest that downsizing and other social stresses outside the job are contributing to the higher level of perceived stress on the job, and hence higher levels of work rage. Advocates are calling for companies to be more attentive to work rage issues and to adopt zero-tolerance standards to protect their employees.

Work rage is only one expression of stress in our society. Stress can be the cause for lashing out and it can cause a number of internally directed psychological concerns. Our personal well-being and psychological and physical health is integrally tied to social and psychological influences. In this chapter we examine health and stress.

Two Approaches to Health and Illness

How do the biomedical and biopsychosocial models differ in their approaches to health and illness?

There are two main approaches to health and illness. The **biomedical model**, the predominant view in medicine, focuses on illness rather than health. It

explains illness in terms of biological factors without considering psychological and social factors that might contribute to the condition.

Another approach that is gaining serious attention is the **biopsychosocial model** of health and wellness (see Figure 11.1). This approach focuses on health as well as illness, and holds that both are determined by a combination of biological, psychological, and social factors (Engel, 1977, 1980; Schwartz 1982). This model, which most health psychologists endorse, goes beyond disease prevention to include health promotion (Breslow, 1999).

But first, what is **health psychology**? Health psychology is “the field within psychology devoted to understanding psychological influences on how people stay healthy, why they become ill, and how they respond when they do get ill” (Taylor, 1991, p. 6). Health psychologists study psychological factors asso-

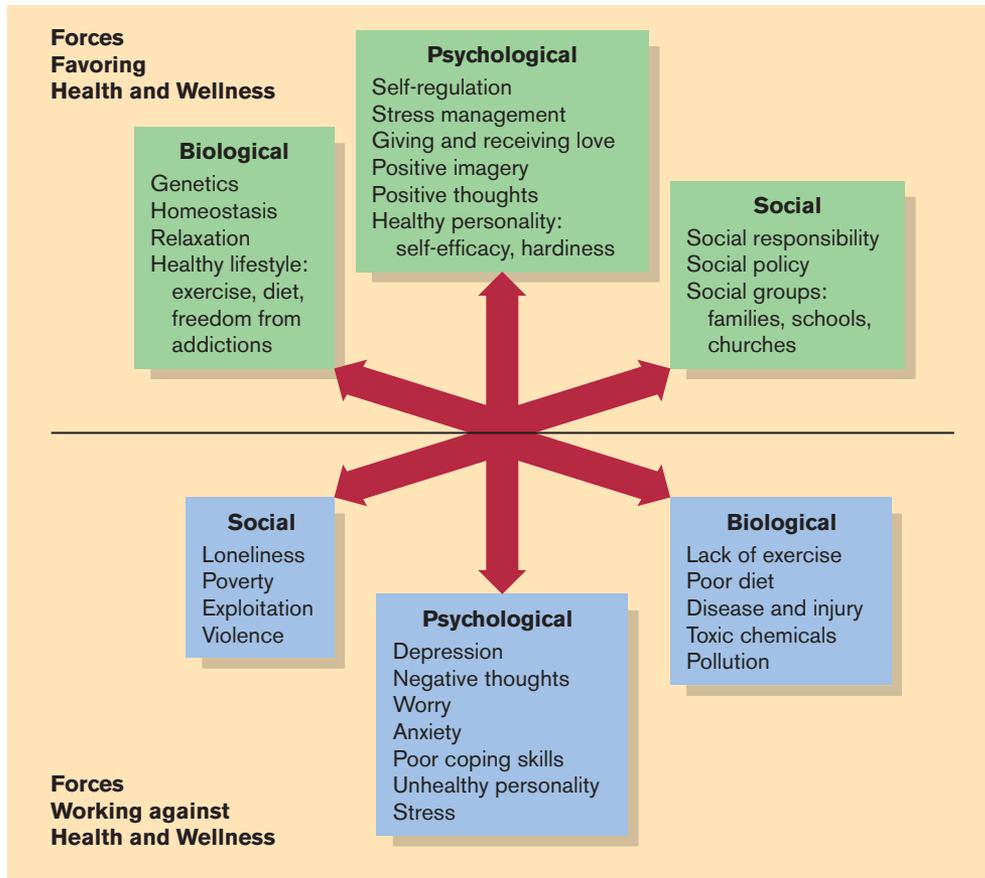


FIGURE 11.1
The Biopsychosocial Model of Health and Wellness The biopsychosocial model focuses on health as well as illness, and holds that both are determined by a combination of biological, psychological, and social factors. Most health psychologists endorse the biopsychosocial model. (From Green & Shellenberger, 1990.)

ciated with health and illness, and they promote interventions that foster good health and aid recovery from illness.

Why do people become ill in the modern age? At the beginning of the 20th century, the primary causes of death in Canada were pneumonia and infectious diseases such as diphtheria and tuberculosis. The health menaces of modern times are diseases related to unhealthy lifestyle and stress—heart attack, stroke, hardening of the arteries, cancer, and cirrhosis of the liver. In this chapter we will discuss stress, disease, and behaviours that promote and compromise health.

Theories of Stress

How would you define stress? Is stress something in the environment? Is it a physiological or psychological reaction that occurs within a person? Is it something we should avoid at all costs? As with most issues in psychology, there are different ways to view stress. Some researchers emphasize the physiological effects of stress, whereas others focus on the role that our

thinking plays in stress (Carpi, 1996). Most psychologists define **stress** as the physiological and psychological response to a condition that threatens or challenges the individual and requires some form of adaptation or adjustment.

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biomedical model: A perspective that focuses on illness rather than health, explaining illness in terms of biological factors without regard to psychological and social factors.

biopsychosocial model: A perspective that focuses on health as well as illness, and holds that both are determined by a combination of biological,

psychological, and social factors.

health psychology: The field concerned with the psychological factors that contribute to health, illness, and recovery.

stress: The physiological and psychological response to a condition that threatens or challenges a person and requires some form of adaptation or adjustment.

Hans Selye and the General Adaptation Syndrome

An early, classic contribution to stress research was made by Walter Cannon (1932), who described the fight-or-flight response. Cannon discovered that when any threat is perceived by an organism (animal or human), the sympathetic nervous system and the endocrine glands prepare the body to fight the threat or flee from it. Cannon considered the fight-or-flight response wonderfully adaptive, because it helps the organism respond rapidly to threats. He also considered it potentially harmful in the long run if an organism is not able to fight or flee and experiences prolonged stress and continuing physical arousal (Sapolsky, 1994).

Canadian scientist Hans Selye (1907–1982) is the researcher most prominently associated with the study of stress and health. Selye spent most of his pioneering career at McGill University (1932 to 1945) and the Université de Montréal (1945 to 1977). At McGill, he conducted research on the effects of sex hormones. In one experiment he injected rats with hormone-rich extracts of cow ovaries. What happened to the rats? To Selye's amazement, (1) their adrenal glands became swollen, (2) their immune systems were weakened, and (3) they developed bleeding ulcers in the stomach and intestines. Never before had a hormone been shown to cause such clear physical symptoms. Selye thought he might be on the verge of discovering a new hormone. But after further experiments he found that he could produce the same symptoms by trying almost anything on the rats—for example, exposing them to toxic chemicals or freezing temperatures. Even extreme muscle fatigue caused the same symptoms. It seemed that Selye had not discovered anything at all. He was crushed. Then brooding gave way to reflection.

He realized that the body responds in much the same way to all harmful agents (toxic substances, injuries, electric shock) and a host of other stressors. The physical response was so predictable, so general, that Selye named it the “general adaptation syndrome.” As a medical student in the 1920s, Selye had been struck by the fact that patients admitted to the hospital with an amazingly wide variety of illnesses all had many of the same physical symptoms. Now he was seeing general symptoms in rats exposed to a variety of stressors.

Selye was elated by his discovery, but the medical world was skeptical. The notion that organisms react in the same way to a wide range of dangers was completely contrary to the orthodox medical thinking of the day. Within five years, however, Selye had proved that the general stress reaction was indeed the body's way of responding to stress.

The General Adaptation Syndrome: A General Physical Response to Many Stressors

What is the general adaptation syndrome?

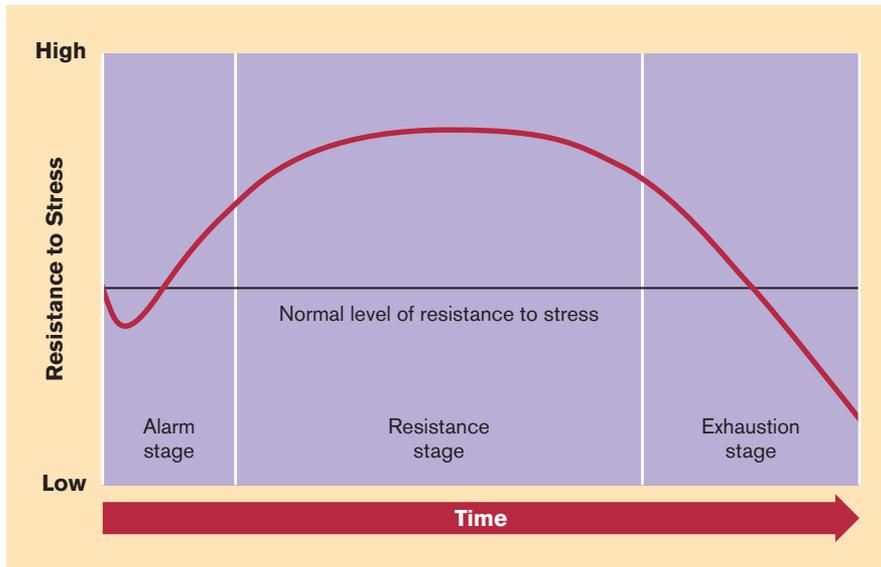
Selye knew that all living organisms are constantly confronted with

stressors—stimuli or events that place a demand on the organism for adaptation or readjustment. Each stressor causes both specific and non-specific responses. Extreme cold, for example, causes the *specific* response of shivering. Apart from this, the body makes a *non-specific* response to a wide variety of stressors. The heart of Selye's concept of stress is the **general adaptation syndrome (GAS)**, his term for the non-specific response to stress (see Figure 11.2). The GAS consists of three stages: alarm, resistance, and exhaustion (Selye, 1956).

The body's first response to a stressor is the **alarm stage**, when emotional arousal occurs and the body prepares its defensive forces to meet the threat. In the alarm stage the sympathetic nervous system, through the release of hormones, mobilizes the body to fight or flee. If the stressor cannot be quickly conquered or avoided, the organism enters the **resistance stage**, which is characterized by intense physiological efforts to either resist or adapt to the stressor. During the resistance stage the adrenal glands pour out powerful hormones (glucocorticoids) to help the body resist stressors. Resistance may last a long time. According to Selye, the length of the resistance stage depends both on the strength or intensity of the stressor and on the body's power to adapt.

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Hans
Selye

**FIGURE 11.2****The General Adaptation Syndrome**

The three stages in Hans Selye's general adaptation syndrome are (1) the alarm stage, during which there is emotional arousal and the defensive forces of the body are mobilized for fight or flight; (2) the resistance stage, in which intense physiological efforts are exerted to resist or adapt to the stressor; and (3) the exhaustion stage, when the organism fails in its efforts to resist the stressor. (Based on Selye, 1956.)

If the organism fails in its efforts to resist, it reaches the **exhaustion stage**. “The stage of exhaustion after a temporary demand upon the body, is reversible, but the complete exhaustion of all stores of deep adaptation energy is not” (Selye, 1974, p. 29). If exposure to the stressor continues, all the stores of deep energy are depleted, and disintegration, disease, or death may follow.

Selye claimed that any event requiring a readjustment, positive or negative, will produce stress in an organism. He did, however, differentiate between the positive and negative aspects of stress. “Eustress” is positive or good stress, including exhilaration, excitement, and the thrill of accomplishment. “Distress” is damaging or unpleasant stress, such as frustration, inadequacy, loss, disappointment, insecurity, helplessness, or desperation.

Criticisms of Selye's Theory: A Missing Cognitive Factor

The connection between extreme, prolonged stress and certain diseases is now widely accepted by medical experts, but some criticism of Selye's work seems justified. The major criticism is directed at Selye's contention that the intensity of the stressor determines one's physical reaction to it. His theory does not provide for a psychological component—that is, it does not consider how a person perceives and evaluates the stressor. This criticism led to the development of the cognitive theory of stress.

Richard Lazarus's Cognitive Theory of Stress

Richard Lazarus contends that it is not the stressor itself that causes stress, but a person's perception of the stressor (Lazarus, 1966; Lazarus & Folkman, 1984). Because Lazarus emphasizes the importance of perceptions and the appraisal of stressors, his is a cognitive theory of stress and coping. To Lazarus, the stress process can be understood in terms of four phases. First, there is a causal agent, either external or internal, commonly referred to as stress or the stressor. Second, the mind or the body evaluates the stressor as either threatening or benign. Third, the mind or the body uses coping processes to deal with the stressor. Finally, there is the stress reaction—the

stressor: Any event capable of producing physical or emotional stress.

general adaptation syndrome (GAS): The predictable sequence of reactions (the alarm, resistance, and exhaustion stages) that organisms show in response to stressors.

alarm stage: The first stage of the general adaptation syndrome, when there is emotional arousal and the defensive forces of the body

are prepared for fight or flight.

resistance stage: The second stage of the general adaptation syndrome, during which there are intense physiological efforts to resist or adapt to the stressor.

exhaustion stage: The final stage of the general adaptation syndrome, occurring if the organism fails in its efforts to resist the stressor.

“complex pattern of effects on mind and body” (Lazarus, 1993, p. 4). Lazarus believes that physiological and psychological stress must be analyzed differently. He argues that while Selye’s general adaptation syndrome describes how the body copes with physiological stress, his model focuses on how we cope with psychological stressors.

The Cognitive Appraisal of Stressors: Evaluating the Stressor and Considering Your Options

What are the roles of primary and secondary appraisal when people are confronted with a potentially stressful event?

According to Lazarus, when people are confronted with a potentially stressful event, they engage in a cognitive process that involves a primary and a secondary

appraisal. A **primary appraisal** is an evaluation of the meaning and significance of a situation—whether its effect on our well-being is positive, irrelevant, or negative. An event appraised as negative or stressful could involve (1) harm or loss—damage that has already occurred; (2) threat—the potential for harm

or loss; or (3) challenge—the opportunity to grow or gain. An appraisal of threat, harm, or loss can be made in relation to anything important to us—a friendship, a part of our body, our property, our finances, or our self-esteem.

The same event can be appraised differently by different people. Some students may welcome the opportunity to give an oral presentation in class, seeing it as a challenge and a chance to impress their professor and raise their grade. Other students may feel threatened, fearing that they may embarrass themselves in front of their classmates and lower their grade in the process. Still others may view the assignment as both a challenge and a threat. When we appraise a situation as one involving harm, loss, or threat, we have negative emotions such as anxiety, fear, anger, and resentment (Folkman, 1984). A challenge appraisal, on the other hand, is usually accompanied by positive emotions such as excitement, hopefulness, and eagerness. Stress for younger people is more likely to take the form of challenges; for older people, stress involving losses and threats is more common (El-Shiekh et al., 1989).

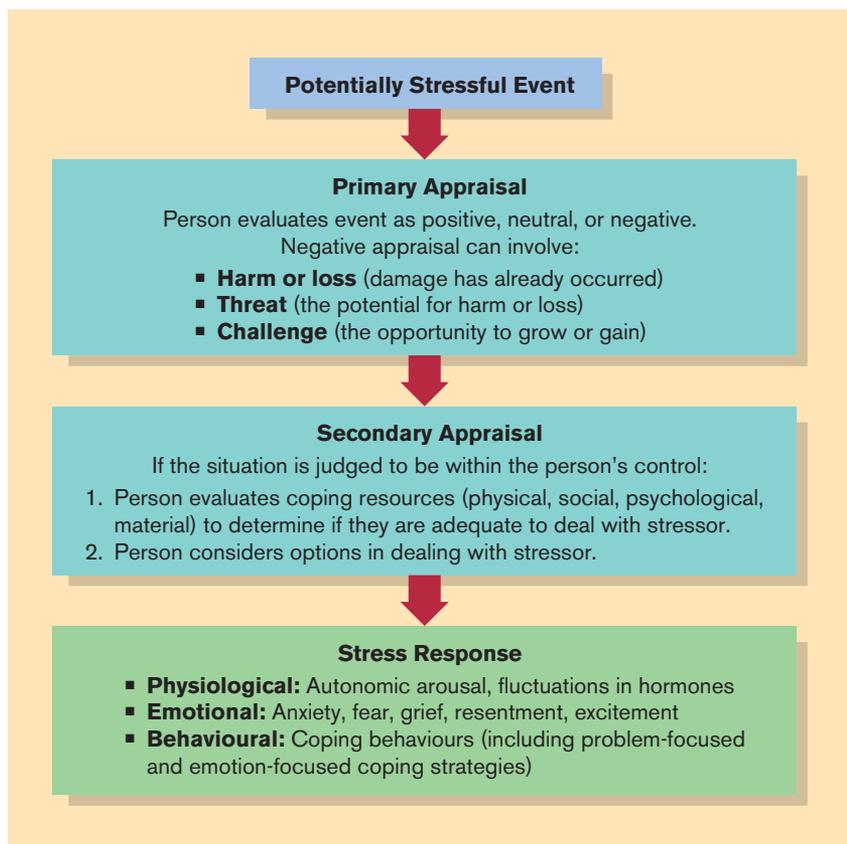


FIGURE 11.3

Lazarus and Folkman's Psychological Model of Stress

Lazarus and Folkman emphasize the importance of a person's perceptions and appraisal of stressors. The stress response depends on the outcome of the primary and secondary appraisals, whether the person's coping resources are adequate to cope with the threat, and how severely the resources are taxed in the process. (Based on Folkman, 1984.)

Approaches to Health and Theories of Stress

- The biomedical model focuses on _____; the biopsychosocial model focuses on _____.
 - illness; illness
 - health and illness; illness
 - illness; health and illness
 - health and illness; health and illness
- Which stage of the general adaptation syndrome is marked by intense physiological efforts to adapt to the stressor?
 - readjustment stage
 - resistance stage
 - alarm stage
 - exhaustion stage
- Susceptibility to illness increases during what stage of the general adaptation syndrome?
 - readjustment stage
 - resistance stage
 - alarm stage
 - exhaustion stage
- During secondary appraisal, we
 - evaluate our coping resources and consider options in dealing with the stressor.
 - determine whether an event is positive, neutral, or negative.
 - determine whether an event involves loss, threat, or challenge.
 - determine whether an event causes physiological or psychological stress.
- Selye focused on the _____ aspects of stress; Lazarus focused on the _____ aspects of stress.
 - physiological; physiological
 - physiological; psychological
 - psychological; physiological
 - psychological; psychological

Answers: 1. c 2. b 3. d 4. a 5. b

When we assess an event as stressful, we engage in a **secondary appraisal**. During secondary appraisal, if we judge the situation to be within our control, we make an evaluation of our available coping resources: physical (health, energy, stamina), social (support network), psychological (skills, morale, self-esteem), material (money, tools, equipment), and time. Then we consider our options and decide how we will deal with the stressor. The level of stress we feel depends largely on whether our resources are adequate to cope with the threat, and how severely our resources will be taxed in the process. Figure 11.3 summarizes Lazarus and Folkman's psychological model of stress.

Research support exists for Lazarus and Folkman's contention that the physiological, emotional, and behavioural reactions to stressors depend partly on whether the stressors are appraised as challenging or threatening. Tomaka and colleagues (1993) found that active coping with stressors that are appraised as challenging was associated with increased heart rate, better performance, and positive emotions. Active coping with stressors appraised as threatening was related to increased blood pressure, poorer performance, and negative emotional tone.

Sources of Stress: The Common and the Extreme

Some stressors produce temporary stress, whereas others produce chronic stress—a state of stress that continues unrelieved over time. Chronic health problems, physical handicaps, poverty, and unemployment are sources of chronic stress. The burden of chronic stress is disproportionately heavy for the poor, for minorities, and for the elderly.

Everyday Sources of Stress

How do approach–approach, avoidance–avoidance, and approach–avoidance conflicts differ?

Sometimes conflicting motives can be sources of stress. When we must make a choice between two desirable

primary appraisal:

Evaluating the significance of a potentially stressful event according to how it will affect one's well-being—whether it is perceived as irrelevant or as involving

harm or loss, threat, or challenge.

secondary appraisal:

Evaluating one's coping resources and deciding how to deal with a stressful event.

alternatives, we are facing an **approach–approach conflict**, and stress may be the result. Some approach–approach conflicts are minor, such as deciding which movie to see. Others can have major consequences, such as whether to continue building a promising career or to interrupt the career to raise a child. In approach–approach conflicts, both choices are desirable.

In **avoidance–avoidance conflicts** we must choose between two undesirable alternatives. You may want to avoid studying for an exam, but at the same time want to avoid failing the test. In an **approach–avoidance conflict** we are simultaneously drawn to and repelled by a choice; for example, we may want to take a wonderful vacation but we would have to empty our savings account to do so.

Unpredictability and Lack of Control: Factors That Increase Stress

How do the unpredictability of and lack of control over a stressor affect its impact?

Our physical and psychological well-being is profoundly influenced by the degree to which we feel a sense of control over our lives (Rodin & Salovey, 1989). Langer and Rodin (1976) studied the effects of control on nursing-home residents. One group of residents was given some measure of control over their lives, such as choices in arranging their rooms and in the times they could see movies. They showed improved health and well-being and had a lower death rate than another group that was not given control. Within 18 months, 30 percent of the residents given no choices had died, compared to only 15 percent of those who had been given some control over their lives. Control is important for cancer patients as well. Some researchers suggest that for cancer patients a sense of control over their daily physical symptoms and emotional reactions may be even more important than control over the course of the disease itself (Thompson et al., 1993).

Several studies suggest that we are less subject to stress when we have the power to do something about it, whether we exercise that power or not. Glass and Singer (1972) subjected two groups of subjects to the same loud noise, but the subjects in one group were told that they could, if necessary, terminate the noise by pressing a switch. Subjects in the group that had the control suffered less stress even though they never did exercise the control they were given. Friedland

and colleagues (1992) suggest that when people experience a loss of control because of a stressor, they are motivated to try to re-establish control in the stressful situation, as is illustrated in the next *It Happened in Canada* story. If they fail in this, they often attempt to increase their sense of control in other areas of life.

Racial Stress

A significant source of everyday stress is being a member of a minority group in a majority culture. A study of white and black participants' responses to a survey about ways of coping suggests that a person may experience racial stress from simply being one of the few or only members of a particular race in any of a variety of settings (classroom, workplace, or a social setting). The feeling of stress can be intense, even in the absence of racist attitudes, discrimination, or any other overt evidence of racism (Plummer & Slane, 1996).

Catastrophic Events and Chronic Intense Stress

How do people typically react to catastrophic events?

Environmental, social, bodily, and emotional stressors are a fact of life for most people. Some people have the misfortune to experience a catastrophic event such as a plane crash, a fire, or an earthquake. Panic reactions are rare except in situations such as fires, which people feel they must escape immediately. Many victims of catastrophic events initially appear dazed, stunned, and emotionally numb. They seem disoriented and may wander about aimlessly, often unaware of their own injuries and without attempting to help themselves or others. Following this stage, the victims show a concern for others; although unable to act efficiently on their own, they are willing to follow the directions of rescue workers. You may have observed these reactions in TV coverage of the earthquake in Los Angeles, or the floods in Manitoba and Quebec, or the ice storm that devastated southern Quebec and eastern Ontario.

As victims begin to recover, this shock is replaced by generalized anxiety. Recovering victims typically have recurring nightmares and feel a compulsive need to retell the event over and over. Perhaps re-experiencing the event through dreaming and retelling helps desensitize them to the horror of the experience. Crisis intervention therapy can provide victims with both

IT HAPPENED IN CANADA

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Disaster

How do people respond in the face of uncontrollable events? Clinical and social psychologists alike have extensively researched this issue. Studies try to imitate, often in a laboratory, the pressures that people would experience under traumatic conditions. But nothing can fully capture the experience of losing control over your life in the way that happens when a chaotic event hits you unexpectedly. The holiday makers at Green Acres Campground in Alberta and the residents of Walkerton, Ontario, know the full extent of what is involved in either a natural or man-made disaster.

It was around suppertime and many campers at the Green Acres Campground in Alberta were in the process of starting or clearing up after their evening meal when the sky began to blacken and winds and hail the size of golf balls swept through the trailer campground. Anticipating a storm, campers began to reel in their trailer awnings, but no one was prepared for the funnel cloud that engulfed the site. With winds exceeding 300 kilometres an hour, trees were snapped like twigs, boats were overturned, vehicles and trailers were picked up and scattered like toys. The result was devastation. In only minutes the campground was transformed to rubble. Ten people died and at least 130 were injured; for the others the trauma will be with them for the rest of their lives (Benedict & Cameron, 2000; Mahoney, 2000).

For the people of Walkerton, Ontario, the trauma was much slower and involved mounting fear as the residents of their community started to become fatally ill and no one could tell them why. At first it was children who showed the characteristic bloody diarrhea indicating contamination of food or water. But the public utilities company assured residents and medical health authorities that the water was safe and secure, so health officials began to search the town for possible food contaminants (Bruce-Grey-Owen Sound Health Unit, 2000). Meanwhile, more people were falling ill; so many that they had to be flown to neighboring communities for medical help. Finally, the community was informed that their water supply was contaminated with a deadly strain of E. coli bacteria. But the news and replacement water didn't come until after five people had already died and 400 were being treated in hospital emergency departments (Wickens & Hawkes, 2000).

For some people, these events led to stress, frayed tempers, extraordinary fear, frustration, and crying spells. Other people reacted by trying to help those around them. And now many are trying to make some sense of these events as they pull their lives together.

coping strategies and realistic expectations about the problems they may face in connection with the trauma.

Posttraumatic Stress Disorder: The Trauma Is Over, but the Stress Remains

What is posttraumatic stress disorder?

Posttraumatic stress disorder (PTSD) is a prolonged and severe stress reaction to a catastrophic event (such as a plane crash, an earthquake, or rape) or to chronic intense stress (such as occurs in combat or during imprisonment as a hostage). The disorder may show up immediately, or it may not appear until six months or more after the traumatic experience, in which case it is called *delayed* posttraumatic stress disorder. The most

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When writer Pico Iyer's home was destroyed by arson, he saved only his cat and his manuscript. A fairly common reaction to such catastrophic events is posttraumatic stress disorder.

approach–approach

conflict: A conflict arising from having to choose between desirable alternatives.

avoidance–avoidance

conflict: A conflict arising from having to choose between equally undesirable alternatives.

approach–avoidance

conflict: A conflict arising when a choice has both desirable and undesirable

features, so that you are both drawn to and repelled by the same choice.

posttraumatic stress disorder (PTSD):

A prolonged and severe stress reaction to a catastrophic or otherwise traumatic event, characterized by anxiety, psychic numbing, withdrawal from others, and the feeling that one is reliving the traumatic experience.

serious cases of PTSD are found among those who have witnessed brutal atrocities: Cambodian refugees (Carlson & Rosser-Hogan, 1991), Holocaust survivors (Kuch & Cox, 1992), or victims of state-sanctioned terror and torture (Bloche & Eisenberg, 1993). High rates of PTSD were found among Canadian Vietnam veterans. Of 164 veterans, 90 had symptoms of PTSD (Stretch, 1990).

People with posttraumatic stress disorder often have flashbacks, nightmares, or intrusive memories in which they feel as if they are actually re-experiencing the traumatic event. They suffer from heightened anxiety and startle easily, particularly in response to anything that reminds them of the trauma (Green et al., 1985). Many survivors experience survivor guilt because they lived while others died. Some feel that perhaps they could have done more to save others.

Is there anything that can be done to lessen the stress that follows major trauma? According to Bloche and Eisenberg (1993), “Belief systems that give life a sense of purpose and meaning can prevent emotional damage” (p. 5).

LINK IT!

www.long-beach.va.gov/ptsd/stress.html
Post Traumatic Stress Resources Web Page

www.rovers.net/~schwcof/ptsd.html
Post-Traumatic Stress Disorder
Bibliography

play.psych.mun.ca/~dhart/trauma_net
Canadian Traumatic Stress Network

Coping with Stress

When we encounter stressful situations, we try either to alter them or to reinterpret them to make them seem more favourable. **Coping** refers to our efforts to deal with demands that we perceive as taxing or overwhelming (Lazarus, 1993).

Problem-Focused and Emotion-Focused Coping

What is the difference between problem-focused and emotion-focused coping?

Coping strategies fall into two categories: problem-focused and emotion-focused (Lazarus & Folkman, 1984). **Problem-**

focused coping is direct; it involves reducing, modifying, or eliminating the source of stress. If you are getting a poor grade in history and appraise this as a

on the cutting edge in canada

Humour

Is laughter the best medicine? Rod Martin (1996), at the University of Western Ontario, recently investigated the positive impact of humour on general psychological well-being and coping with stress. He is now comparing the circumstances under which humour is healthy or not healthy.

Unhealthy uses of humour include putting people down, avoiding dealing with problems, or minimizing important issues (Kuiper & Martin, 1998).

Martin has demonstrated that people who report high levels of negative

life events also have lower humour scores. Moreover, those with high humour scores may find stressful events somewhat invigorating rather than disturbing. In addition, people with higher levels of coping humour perceive themselves as having more control over their lives: they feel less overwhelmed, less anxious, and less stressed than people who have low levels of coping humour. Most impressive are the studies that demonstrate that a sense of humour may moderate physiological responses to stress. Using measures of secretions of immunoglobulin-A—a physiological marker of stress—Martin and his colleagues were able to show that humour

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Rod Martin

reduces physiological effects of stress on the immune system. This research may serve as the foundation for therapeutic interventions.

REVIEW & REFLECT 11.1**Problem-Focused and Emotion-Focused Coping Strategies**

Coping Strategy	Definition	Examples
Problem-focused	A response aimed at reducing, modifying, or eliminating the source of stress.	Acting to remove or lessen the threat. Removing oneself from the stressful situation. Enlisting the help of others in dealing with the threat. Seeking professional help or advice. Acting to prevent recurrence of similar stressful situations.
Emotion-focused	A response aimed at reducing the emotional distress caused by the stressor.	Viewing the stressor as a challenge rather than a threat. Using one of these responses: prayer, denial, wishful thinking, fantasizing, humour, relaxation, biofeedback, alcohol, drugs, overeating, promiscuous sex.

threat, you may study harder, talk over your problem with your professor, form a study group with other class members, get a tutor, or drop the course.

But what can we do when we face stress that we cannot fight, escape from, avoid, or modify in any way? We can use **emotion-focused coping** to change the way we respond emotionally. Emotion-focused coping may involve reappraising a stressor. If you lose your job, you may decide that it isn't a major tragedy and instead view it as a challenge—an opportunity to find a better job with a higher salary. To cope emotionally, people may use anything from religious faith, wishful thinking, or denial, to alcohol, drugs, or promiscuous sex (Lazarus & DeLongis, 1983). But misguided emotion-focused coping efforts can become additional sources of stress themselves.

Well-functioning people use a combination of problem-focused and emotion-focused coping in almost every stressful situation. Folkman and Lazarus (1980) studied the coping patterns of 100 individuals over a 12-month period and found that 98 percent of them used both types of coping in the 1300 stressful life events they had confronted. Not surprisingly, problem-focused coping strategies increased in situations that subjects appraised as changeable, and emotion-focused coping techniques increased in situations appraised as not changeable.

The two types of coping are summed up in the well-known saying: “Grant me the strength to change those things that I can change [problem-focused cop-

ing], the grace to accept those things that I cannot change [emotion-focused coping], and the wisdom to know the difference.” Review & Reflect 11.1 summarizes the problem-focused and emotion-focused coping strategies.

Coping with Traumatic Events

A task force of experts on stress developed strategies for treating stress reactions in people who had experienced traumatic events (Hobfoll et al., 1991). These stress experts suggest a number of positive coping strategies:

- When you attempt to cope with complex stressful events, break the problems down into small goals and tasks that can be accomplished. Develop a system of rewards for small accomplishments.
- Begin to act now. Dealing with your problems will begin to restore a feeling of control over your life and increase your feeling of self-efficacy.

coping: Efforts through action and thought to deal with demands that are perceived as taxing or overwhelming.

problem-focused coping: A response aimed at

reducing, modifying, or eliminating a source of stress.

emotion-focused coping: A response aimed at reducing the emotional impact of the stressor.

- Don't isolate yourself from other people.
- Seek the support you need. Help may be available from close family members or friends, a support group or religious group, clergy, school counselors, psychologists, and other sources.
- Find ways to help others. You will feel less like a victim and more like a contributor.
- Use problem-focused coping to change aspects of your situation that are changeable; use emotion-focused coping to accept your situation and reduce your anxiety and arousal.
- Try to develop an optimistic attitude—a belief that your coping efforts will improve your situation.
- Avoid the temptation to use illicit drugs, alcohol, or large amounts of prescription drugs as a means of coping.

Evaluating Life Stress: Major Life Changes, Hassles, and Uplifts

There are two major approaches to evaluating life stress and its relation to illness. One approach focuses

on major life events, which cause life changes that require adaptation. A second approach focuses on life's daily hassles.

Holmes and Rahe's Social Readjustment Rating Scale: Adding Up the Stress Score

What is the Social Readjustment Rating Scale designed to reveal?

Interested in the relationship between life changes and illness, Thomas Holmes and Richard Rahe (1967) developed the **Social**

Readjustment Rating Scale (SRRS). The SRRS is designed to measure stress by ranking different life events from most to least stressful. Each life event is assigned a point value. Life events that produce the greatest life changes and require the greatest adaptation are considered the most stressful, regardless of whether the events are positive or negative. The 43 life events range from death of a spouse (100 stress points) to such items as divorce (73 points), death of a close family member (63 points), marriage (50 points), pregnancy (40 points), and trouble with the boss (23 points) to minor law violations such as getting a traffic ticket (11 points). Would you like to learn the number of stress points in your life? Complete *Try It!*

Sources of and Coping with Stress

1. Rick cannot decide whether to go out or stay home and study for his test. What kind of conflict does he have?
 - a. approach–approach conflict
 - b. avoidance–avoidance conflict
 - c. approach–avoidance conflict
 - d. ambivalence–ambivalence conflict
2. Panic is the most common *initial* reaction to a catastrophic event. (true/false)
3. Victims of catastrophic events typically want to talk about their experience. (true/false)
4. What has research shown to increase stress?
 - a. predictability of the stressor
 - b. unpredictability of the stressor
 - c. predictability of and control over the stressor
 - d. unpredictability of and lack of control over the stressor
5. Posttraumatic stress disorder is a prolonged and severe stress reaction that results when a number of common sources of stress occur simultaneously. (true/false)
6. Coping aimed at reducing, modifying, or eliminating a source of stress is called _____ coping; coping aimed at reducing an emotional reaction to stress is called _____ coping.
 - a. emotion-focused; problem-focused
 - b. problem-focused; emotion-focused
 - c. primary; secondary
 - d. secondary; primary
7. People typically use a combination of problem-focused and emotion-focused coping when dealing with a stressful situation. (true/false)

Answers: 1. c 2. false 3. true 4. d 5. false 6. b 7. true



Try It!

Finding Your Stress Score

To assess your life in terms of life changes, check all the events listed that have happened to you in the past year. Add up the points to derive your stress score.

Rank	Life Event	Life Change Unit Value	Your Scores	Rank	Life Event	Life Change Unit Value	Your Scores
1	Death of spouse	100	_____	23	Son or daughter leaving home	29	_____
2	Divorce	73	_____	24	Trouble with in-laws	29	_____
3	Marital separation	65	_____	25	Outstanding personal achievement	28	_____
4	Jail term	63	_____	26	Spouse beginning or stopping work	26	_____
5	Death of close family member	53	_____	27	Beginning or ending school	26	_____
6	Personal injury or illness	53	_____	28	Change in living conditions	25	_____
7	Marriage	50	_____	29	Revision of personal habits	24	_____
8	Getting fired at work	47	_____	30	Trouble with boss	23	_____
9	Marital reconciliation	45	_____	31	Change in work hours or conditions	20	_____
10	Retirement	45	_____	32	Change in residence	20	_____
11	Change in health of family member	44	_____	33	Change in schools	20	_____
12	Pregnancy	40	_____	34	Change in recreation	19	_____
13	Sex difficulties	39	_____	35	Change in church activities	19	_____
14	Gain of new family member	39	_____	36	Change in social activities	18	_____
15	Business readjustment	39	_____	37	Taking out loan for lesser purchase (e.g., car or TV)	17	_____
16	Change in financial state	38	_____	38	Change in sleeping habits	16	_____
17	Death of close friend	37	_____	39	Change in number of family get-togethers	15	_____
18	Change to different line of work	36	_____	40	Change in eating habits	15	_____
19	Change in number of arguments with spouse	35	_____	41	Vacation	13	_____
20	Taking out loan for major purchase (e.g., home)	31	_____	42	Christmas	12	_____
21	Foreclosure of mortgage or loan	30	_____	43	Minor violation of the law	11	_____
22	Change in responsibilities at work	29	_____				
					Total score:		_____

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Even positive life events, such as getting married, can cause stress.

Social Readjustment Rating Scale (SRRS): A stress scale, developed by Holmes and Rahe, which ranks 43 different life events from most to least stressful and assigns a point value to each.

Holmes and Rahe maintain that there is a connection between the degree of life stress and major health problems. After analyzing more than 5000 medical case histories, they concluded that major life changes often precede serious illness (Rahe et al., 1964).

However, one of the main shortcomings of the SRRS is that it assigns a point value to each life change without taking into account whether the change is for the better or the worse. For example, life changes such as divorce, separation, pregnancy, retirement from work, and changing jobs or residences may be either welcome or unwelcome.

The Hassles of Life: Little Things Stress a Lot

What roles do hassles and uplifts play in the stress of life, according to Lazarus?

Richard Lazarus disagrees with the rationale behind Holmes and Rahe's scale. He contends that one cannot weight life

events for stressfulness without considering their meaning to the individual. He also believes that the little stressors, which he calls **hassles**, add up to more stress than major life events.

Daily hassles are the “irritating, frustrating, distressing demands and troubled relationships that plague us day in and day out” (Lazarus & DeLongis, 1983, p. 247). Kanner and colleagues (1981) developed the Hassles Scale to assess various categories of hassles. Unlike the Holmes and Rahe scale, the Hassles Scale takes into account that items may or may not represent stressors and that the amount of stress produced by an item varies from person to person. People completing the scale indicate which items have been a hassle for them and rate them for severity on a three-point scale. Research indicates that minor hassles that accompany stressful major life events are better predictors of the level of psychological distress than the major life events themselves (Pillow et al., 1996).

According to Lazarus, “A person’s morale, social functioning, and health don’t hinge on hassles alone, but on a balance between the good things that happen to people—that make them feel good—and the bad” (quoted in Goleman, 1979, p. 52). Table 11.1 shows the 10 most frequent hassles reported by students.

Fortunately, life’s **uplifts**—that is, the positive experiences—may neutralize or cancel out many of

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the hassles. Lazarus and his colleagues also constructed an Uplifts Scale. As with the Hassles Scale, people make a cognitive appraisal in determining what they consider an uplift. Items viewed as uplifts by some people may actually be stressors for other people. Kanner and colleagues (1981) found that for middle-aged people, uplifts were often health- or family-related; for students, uplifts often came in the form of having a good time.

Health and Disease

Health psychologists study the myriad ways in which we respond to illness risk factors, and the factors that affect whether we seek treatment. Let’s look at two examples: cancer and AIDS.

LINK IT!

www.canadian-health-network.ca
The Canadian Health Network



Evaluating Stress

1. On the Social Readjustment Rating Scale, only negative life changes are considered stressful. (true/false)
2. The Social Readjustment Rating Scale takes account of the individual's perceptions of the stressfulness of the life change in assigning stress points. (true/false)
3. According to Lazarus, hassles typically account for more life stress than major life changes. (true/false)
4. Lazarus's approach in measuring hassles and uplifts considers individual perceptions of stressful events. (true/false)

Answers: 1. false 2. false 3. true 4. true

Cancer: A Dreaded Disease

Cancer. The word alone is frightening. It is second only to heart disease as the leading cause of death. It was estimated that in 2000, 132 100 Canadians would be diagnosed with cancer and 65 000 would die of it (Cunningham, 2000). Young people are not spared the scourge of cancer, which takes the lives of more children between the ages of three and fourteen than any other disease.

We speak of cancer as a single disease, but actually it is a complicated collection of diseases. Cancer can invade the cells in any part of a living organism—humans, other animals, and even plants. Cancer always starts small, because it is a disease of the body's cells. Normal cells in all parts of the body reproduce (divide), and they have built-in instructions about when to stop doing so. If they did not, every part of the body would continue to grow as long as it lived. Unlike normal cells, cancerous cells do not stop dividing. Unless they can be caught in time and destroyed, they continue to grow and spread, eventually killing the organism.

Risk Factors for Cancer

Health psychologists warn that an unhealthy diet, smoking, excessive alcohol consumption, promiscuous sexual behaviour, and becoming sexually active in the early teens (especially for females) are all behaviours that increase the risk of cancer. Compared with

those who do not get cancer, many cancer patients report that they faced more high-stress situations in their lives before their cancer was diagnosed.

Coping with Cancer

What can cancer patients do to help them cope with having cancer?

People who are diagnosed with cancer must adjust to the chronic stressors associated with it. They must cope with dif-

icult therapies, “continued emotional distress, disrupted life tasks, social and interpersonal turmoil and fatigue and low energy” (Anderson et al., 1994, p. 390). The chronic stress associated with cancer can damage the autonomic, endocrine, and immune systems. Anderson and colleagues suggest that patients need more than medical treatment: their therapy should also involve helping them maintain their quality of life. Patients should be able to discuss their fears and anxieties, be given information about their disease and treatment, and be taught how to lower their arousal. In addition, researchers at the University of Manitoba (Degner et al., 1997) have found that a majority of women prefer to exercise some control over their treatment, with input from their physician, rather than selecting their own treatment or relinquishing the treatment plan to their physician.

What have health psychologists found that can help cancer patients? Carver and colleagues (1993) found that breast-cancer patients who maintained an optimistic outlook, accepted the reality of their situation, and maintained a sense of humour experienced less distress three months and six months after surgery. Patients who refused to accept the reality of the situation and who had thoughts of giving up experienced much higher levels of distress. Dunkel-Schetter and colleagues (1992) found that the most effective elements of a strategy for coping with cancer were social support (such as through self-help groups), a focus on the positive, and distraction. Avoidant coping strategies such as fantasizing, denial, and social withdrawal were associated with more emotional distress.

hassles: Little stressors that include the irritating demands and troubled relationships that are encountered daily and that, according to Lazarus, cause

more stress than do major life changes.

uplifts: The positive experiences in life, which can neutralize the effects of many of the hassles.

LINK IT!

www.cancer.ca/stats2000/highle.htm
Canadian Cancer Statistics 2000

The Immune System: An Army of Cells to Fight Off Disease

Most researchers today do not question that stress and health are closely related (Kiecolt-Glaser & Glaser, 1992). People who experience stress may indeed be more susceptible to coronary heart disease, stroke, and poorer pregnancy outcomes (Adler & Matthews, 1994; Davidson et al., 2000). But even more ominous is the growing evidence that stress can impair the functioning of the immune system itself.

The immune system, now known to be one of the most complex systems of the body, protects us from infection and disease. An army of highly specialized cells and organs, the immune system identifies and destroys any bacteria, viruses, fungi, parasites, and other foreign materials that enter the body. The immune system can identify a pathogen it has encountered before, sometimes over the entire lifespan (Ahmed & Gray, 1996). Cells of the immune system can distinguish instantly between self and non-self. Virtually every cell in your body carries distinctive molecules that mark it as self (Schindler, 1988). Non-self cells carry their own distinctive molecules, which mark them as foreign invaders to be attacked and destroyed. This is why transplanted organs are rejected by the immune system unless powerful immune-suppressant drugs are administered—they are foreign or non-self tissue to the recipient.

AIDS

What happens to a person from the time of infection with HIV to the development of full-blown AIDS?

The most feared disease related to the immune system is AIDS (acquired immune deficiency syndrome), which is caused by the human immunodeficiency virus (HIV). The virus attacks the helper cells, gradually but relentlessly weakening the immune system. The first case of AIDS was diagnosed in Canada in the early 1980s; there is still no cure for it and no vaccine to protect against it.

When a person is first infected, HIV enters the bloodstream. This initial infection usually causes no

symptoms, and the immune system begins to produce HIV antibodies. It is these antibodies that are detected in the AIDS test. Individuals then progress to the asymptomatic carrier state, during which they experience no symptoms at all and thus can unknowingly infect others.

HIV attacks the immune system until it becomes essentially non-functional. The diagnosis of AIDS is made when the immune system is so damaged that victims develop rare forms of cancer or pneumonia or other “opportunistic” infections. Such infections would not usually affect people with a normal immune response; in people who have a very impaired immune system, these infections can be life-threatening. At this point patients typically experience progressive weight loss, weakness, fever, swollen lymph nodes, and diarrhea; a further 25 percent have a rare cancer that produces red-purple spots on the skin. Other infections develop as the immune system weakens further.

The average time from infection with HIV to advanced AIDS is about 10 years; but the time may range from 2 to 15 years (Nowak & McMichael, 1995). The disease progresses faster in smokers, in the very young, in people over 50, and (apparently) in women. AIDS also progresses faster in those who have been repeatedly exposed to the virus and in those who were infected by someone in an advanced stage of the disease.

The Transmission of AIDS

HIV is transmitted primarily through the exchange of blood, semen, or vaginal secretions during sexual contact or when IV (intravenous) drug users share contaminated needles or syringes (Des Jarlais & Friedman, 1994). Infected mothers can also infect the fetus prenatally, during childbirth, and when breastfeeding. Fortunately, recent research has identified a number of interventions that have reduced the transmission to rates as low as 4 to 10 percent, from previous levels of about 32 percent (Duong et al., 1999; Sullivan, 1997; Van de Perre, 1999).

The Psychological Impact of HIV Infection and AIDS

Most people are psychologically devastated when they are diagnosed with the AIDS virus. Not only are they being sentenced to an early death, but there is a social stigma associated with AIDS that few other diseases have.

To cope psychologically, AIDS patients and those infected with HIV need education and information about the disease. They can be helped by psychotherapy, self-help groups, and medications such as antidepressants and anti-anxiety drugs. Self-help groups and group therapy may serve as substitute family for some patients. An ever-present concern voiced by patients in psychotherapy is whether to tell others and, if so, what to tell them and how. Patients may feel a compelling need to confide in others and, at the same time, to conceal their condition.

The stigma associated with AIDS can compound the daily lives of AIDS patients. For example, Stewart Page (1999) conducted a study in which he compared the availability of rooms for rent when the interested renter was identified as having AIDS or not. Overall, in two Canadian cities, London and Windsor, and Detroit, Michigan, the probability of the rooms no longer being available was greatest when the potential renter was identified as having AIDS.

Protection against Sexually Transmitted Diseases: Minimizing Risk

Although everyone has seen or heard the messages about “safer” behaviours, many people still ignore the message. Researchers in Ontario surveyed adults at dating bars and found that even though people were concerned about contracting AIDS, many of them had not used any form of protection during their last sexual encounter (Herold & Mewhinney, 1993). People who choose to practise risky sex cannot be safe, but can reduce the risks by using a latex condom. Sexual abstinence or monogamous relationships with partners free of infection also reduce risk.

Stress and the Immune System

What are the effects of stress and depression on the immune system?

In a field of study known as **psychoneuroimmunology**, psychologists, biologists, and medical researchers combine their expertise to learn how psychological factors (emotions, thinking, and behaviour) affect the immune system.

Several studies show that psychological factors, emotions, and stress are related to immune system functioning (O’Leary, 1990). Moreover, the immune system exchanges information with the brain, and what goes on in the brain can apparently influence the immune system for good or ill.

Periods of high stress have been correlated with increased symptoms of many infectious diseases, including oral and genital herpes, mononucleosis, colds, and flu (Jemmott & Locke, 1984). People exposed to cold viruses are more likely to develop colds if they have experienced a greater number of life changes in the previous year (Cohen et al., 1993; Stone et al., 1992). Cohen and Williamson (1991) conclude from a review of studies that stress is associated with an increase in illness behaviours, such as reporting physical symptoms and seeking medical care.

Poor marital relationships, sleep deprivation, and exams and academic pressures have been linked to lowered immune response (Kiecolt-Glaser et al., 1987; Maier & Laudenslager, 1985). Severe, incapacitating depression is related to lowered immune activity (Irwin et al., 1987; Schleifer et al., 1983, 1985). For several months after the death of a spouse, the widow or widower suffers weakened immune system function (Bartrop et al., 1977) and is at a higher risk of mortality (Rogers & Reich, 1988).

McNaughton and colleagues (1990) report that immune suppression in the elderly is associated with depressed mood, severe stress, and dissatisfaction with social supports, whereas improved immune functioning is related to the use of problem-focused coping. Rodin (1986) found that nursing-home residents who were given training in coping skills developed fewer illnesses, suffered less deterioration from chronic conditions, and reported less stress than a similar group not given the training. Moreover, physicians have long observed that stress and anxiety can worsen autoimmune diseases. And, “if fear can produce relapses [in autoimmune diseases], then even the fear of a relapse may become a self-fulfilling prophecy” (Steinman, 1993, p. 112).

Personal Factors Reducing the Impact of Stress and Illness

What three personal factors are associated with health and resistance to stress?

Researchers have identified three personal factors that may contribute to better health: optimism, psychological hardiness, and social support.

psychoneuroimmunology (syeh-ko-NEW-ro-IM-you-NOLL-oh-gee): A field in which psychologists, biologists, and medical researchers study the effects of psychological factors on the immune system.

Optimism and Pessimism

People who are generally optimistic tend to cope more effectively with stress, and this in turn may reduce their risk of illness (Seligman, 1990). Optimists generally expect good outcomes, and this helps make them more stress-resistant than pessimists, who tend to expect bad outcomes. Optimists are more likely to use problem-focused coping, to seek social support, and to find the positive aspects of a stressful situation and to better adjust to stress (Carver et al., 1993; Chang, 1998; Scheier & Carver, 1992). Pessimists are more likely to use denial or to focus on their stressful feelings (Scheier et al., 1986). Scheier and Carver (1985) found that optimistic college students reported fewer physical symptoms than those who were pessimistic. Another study, of patients who had undergone coronary bypass surgery, revealed that optimists recovered faster during their hospitalization and were able to resume their normal activities sooner after discharge than pessimists (Scheier et al., 1989). Apparently, happy thoughts are healthy thoughts.

Psychological Hardiness: Commitment, Challenge, and Control

Suzanne Kobasa (1979; Kobasa et al., 1982) wondered why some people under great stress succumb to illness while others do not. She studied 670 male executives, who identified stressful life events and symptoms of illness that they had experienced in the preceding three years. She then administered personality questionnaires to 200 executives who ranked high for both stress and illness and to 126 who had faced equally stressful life events but had few symptoms of illness. She found three qualities that distinguished those who remained healthy from those who had a high incidence of illness: commitment, control, and challenge. Kobasa collectively called these psychological **hardiness**.

Hardy individuals feel a strong sense of commitment to their work and personal life. They see themselves as having control over consequences and outcomes, and they welcome challenges. Florian and others (1995) found that commitment and control are sufficient to produce hardiness. Control provides the confidence that a person is in charge of the situation and capable of finding the right solution to a problem, and commitment provides the “staying power” to see it through.

Roth and colleagues (1989) suggest that “hardy individuals may possess a cognitive style such that troubling life events are interpreted less negatively and thereby rendered less harmful” (p. 141).

Social Support: Help in Time of Need

Another factor that seems to contribute to better health is **social support** (Kaplan et al., 1994). This includes support provided by a spouse or other family members, and by friends, neighbours, colleagues, support groups, and members of the larger community. Social support can direct help, information, and advice to the individual, as well as emotional support (Cohen, 1988). Social support provides the feeling that we are loved, valued, esteemed, and cared for by those for whom we feel a mutual obligation (Cobb, 1976).

Social support appears to have positive effects on the body’s immune system as well as the cardiovascular and endocrine systems (Uchino et al., 1996). Social support may encourage health-promoting behaviours and reduce the impact of stress so that people are less likely to resort to unhealthy methods of coping, such as smoking and drinking (Adler & Matthews, 1994). Social support has been shown to reduce the impact of stress from unemployment, organizational restructuring, illness, retirement, and bereavement (Burke & Greenglass, 1999; Krantz et al., 1985). A study of 4775 people over a nine-year period found that people with low social support were twice as likely to die as those with high social support (Berkman & Syme, 1979).

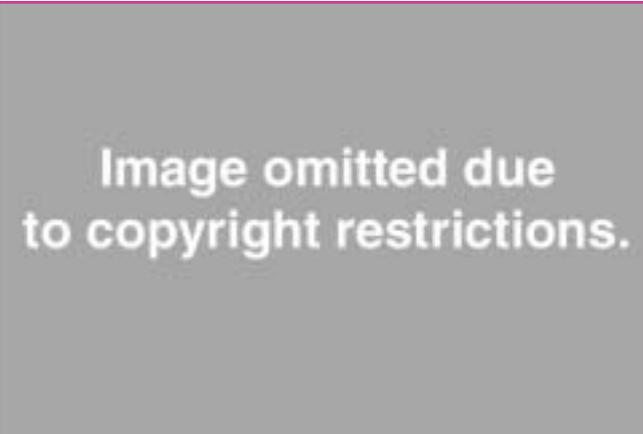


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A strong social support network can help a person recover faster from an illness.



Health and Disease

- Lowered immune response has been associated with
 - stress.
 - depression.
 - stress and depression.
 - neither stress nor depression.
- Some research suggests that optimists are more stress-resistant than pessimists. (true/false)
- Social support tends to reduce stress but is unrelated to health outcomes. (true/false)
- Which of the following is *not* a dimension of psychological hardiness?
 - a feeling that adverse circumstances can be controlled and changed
 - a sense of commitment and deep involvement in personal goals
 - a tendency to look upon change as a challenge rather than a threat
 - close, supportive relationships with family and friends

Answers: 1. c 2. true 3. false 4. d

Recent research on natural disasters reveals that initial social support is common but that the support tends to deteriorate, because the needs of victims overwhelm the tangible and emotional resources of friends and family (Kaniasty & Norris, 1993). Similarly, chronic physical or mental illness may deplete the resources of those supplying care and social support, and lead to burnout (Schulz & Tompkins, 1990).

Your Lifestyle and Your Health

What constitutes an unhealthy lifestyle, and how serious a factor is lifestyle in illness and disease?

If you are not healthy or physically hardy, who or what is to blame? There are a number of enemies of good health: environ-

IT HAPPENED IN CANADA

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Butt Out!

Grabbed a doughnut lately? If you pop into Tim Hortons you will most likely notice the absence of cigarette smoke. In fact, they were forerunners in a trend that is happening across our country. It's a subtle change but it is making a difference for the health of workers and customers everywhere—it is smoke-free legislation. Tim Hortons introduced their first totally smoke-free store in Hamilton in 1984. They introduced separately ventilated smoking rooms in 1994, and by 1999 the entire chain (except in Quebec) went smoke free or had a smoking room (5 percent). Now smoke-free rooms and smoke-free stores are being introduced in Quebec (Slopek, 2000).

Whole communities are now copying the move at Tim Hortons. At present, there are approximately 60 municipalities across Canada that have bylaws requiring smoke-free restaurants, and 44 requiring smoke-free bars. One of the most aggressive provinces is British Columbia, where the Workers' Compensation Board is fining businesses that fail to protect the safety of its workers by banning smoking in the workplace (Cunningham, 2000; Moore, 2000). The idea of smoke-free communities, where smoking is prohibited in all public areas, is the next step, and it is already starting to appear with the voluntary move toward smoke-free bowling alleys, shopping malls, casinos, play parks, and so on.

mental pollutants; job, family, and personal stressors; genetic and congenital defects; accidents and injury; and others. But the number one concern with most people is lifestyle habits. The specific culprits are all well known: an unhealthy diet, overeating, lack of exercise, alcohol and drug abuse, too little sleep, and so on. But the most dangerous unhealthy behaviour of all is smoking.

hardiness: A combination of three psychological qualities shared by people who can undergo high levels of stress yet remain healthy: a sense of control over one's life, commitment to one's personal goals, and a tendency to view change

as a challenge rather than as a threat.

social support: Tangible support, information, advice, and/or emotional support provided in time of need by family, friends, and others; the feeling that we are loved, valued, and cared for.

Smoking: Hazardous to Your Health

Why is smoking considered the single most preventable cause of death?

Today some 20 to 30 percent of Canadians smoke. Smoking is directly related to 35 000 deaths annually in Canada, according to Health and Welfare Canada. And those Canadians who don't smoke but who must breathe smoke-filled air suffer the ill effects of passive smoking (Kawachi et al., 1997). Add to this statistic the suffering from chronic bronchitis, emphysema, and other respiratory diseases; death and injury from fires caused by smoking; and low birth-weight and impaired fetal development in babies born to mothers who smoke.

Why do adult smokers continue the habit even though most admit they would prefer to be non-smokers? There seems little doubt that smoking is an addiction. Nicotine is a powerful substance that increases the release of acetylcholine, norepinephrine, dopamine, and other neurotransmitters, which improve mental alertness, sharpen memory, and reduce tension and anxiety (Pomerleau & Pomerleau, 1989). According to Parrott (1993), some people smoke primarily to increase arousal, whereas others smoke primarily to reduce stress and anxiety. Thus, smoking for most people is a coping mechanism for regulating moods.

Because smoking is so addictive, smokers have great difficulty breaking the habit. Even so, 90 percent of ex-smokers quit smoking on their own (Novello, 1990). The average smoker makes five or six attempts to quit before finally succeeding (Sherman 1994). Some aids, such as nicotine gum and the nicotine patch, help many people kick the habit. A meta-analysis involving 17 studies and more than 5000 people revealed that 22 percent of people who used the nicotine patch were smoke-free, compared with only 9 percent of those who received a placebo. And 27 percent of those receiving the nicotine patch *and* antismoking counselling or support remained smoke-free (Fiore, cited in Sherman, 1994). But even with the patch, quitting is difficult, because the patch only lessens withdrawal symptoms. Withdrawal symptoms typically last two to four weeks (Hughes, 1992). Half of all relapses occur within the first two weeks after people quit. Relapses are most likely when people are experiencing negative emotions or when they are using alcohol. It takes just one cigarette, sometimes only one puff, to cause a relapse.

Alcohol: A Problem for Millions

What are some health risks of alcohol consumption?

Although smoking is directly related to a greater number of deaths, alcohol undoubtedly causes more misery. The health and social costs of alcohol—in fatalities, lost work, family problems, and so on—are staggering. Alcohol abuse and dependence is three times more prevalent in males than in females (Grant et al., 1991). People who begin drinking before age 15 are more likely than those who begin later to become dependent on alcohol (Grant & Dawson, 1998; Prescott & Kendler, 1999). Although a higher percentage of white-collar workers use alcohol, the percentage of problem drinkers is higher among blue-collar workers (Harford et al., 1992). For many, alcohol provides a means of coping with life strains that they feel powerless to control (Seeman & Seeman, 1992).

Alcohol can damage virtually every organ in the body, but it is especially harmful to the liver and is the major cause of cirrhosis. Pregnant women should avoid all alcohol because of its potentially disastrous effects on the developing fetus. Alcohol also affects the brain. The only good news in recent studies is that some of alcohol's effects on the brain seem to be partially reversible with prolonged abstinence.

Alcoholism's toll goes beyond physical damage to the alcoholic. Drunk drivers kill and injure. Alcohol has also been implicated in drownings, suicides, rapes, burglaries, and assaults.

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www.arf.org

Addiction Research Foundation

www.aa-intergroup.org/faq.html

The On-line Intergroup of A.A.: Frequently Asked Questions

Alcoholism: Causes and Treatment

The Canadian Medical Association maintains that alcoholism is a disease, and “once an alcoholic, always an alcoholic.” According to this view, even a small amount of alcohol causes an irresistible craving for more, leading alcoholics to lose control of their drinking (Jellinek, 1960). Total abstinence is seen as the only acceptable recourse. The medical establishment and Alcoholics Anonymous endorse both the disease concept and the total abstinence approach to treatment.

Some studies suggest that there is a genetic factor in alcoholism and lend support to the disease model. According to Goodwin (1985), about one-half of hospitalized alcoholics have a family history of alcohol abuse. Adoption studies have revealed that “sons of alcoholics were three or four times more likely to be alcoholic than were sons of non-alcoholics, whether raised by their alcoholic biologic parents or by non-alcoholic adoptive parents” (Goodwin, 1985, p. 172). Pihl, Peterson, and Finn (1990) at McGill University agree with Goodwin’s findings that sons of male alcoholics have a heightened genetic risk for alcohol abuse. The data for daughters did not show this pattern.

The hypothesis that there is a greater genetic risk of alcoholism for men is also supported by research that involved 356 pairs of identical and fraternal twins (McGue et al., 1992). The study revealed a substantial genetic influence for male twins, especially if their first symptom of alcoholism appeared before they turned 20. A study of 1000 pairs of female identical and fraternal twins found that alcoholism in women is 50 to 60 percent heritable, which is a rate similar to that for male alcoholics (Kendler et al., 1994).

Is alcoholism a disease? Some experts reject the disease concept and contend that alcoholism can take various forms and have various causes (Pattison, 1982). Researchers caution against overlooking the environmental contribution to alcoholism, even in people who are genetically predisposed (Searles, 1988). Family and cultural influences are apparently the dominant factors in men whose drinking problems appear after adolescence. A recent Canadian study (McCreary et al., 1999) demonstrated that men who endorsed traditional male gender roles engaged in a higher level of alcohol consumption than others.

Some experts stress the role of behavioural, social, and cultural factors in alcoholism and advocate various approaches to treatment. One approach—*cue exposure*—systematically exposes the problem drinker to cues that have triggered drinking in the past (Neimark et al., 1994). The individual is prevented from drinking in the presence of those cues and gradually becomes less responsive to them.

With behaviour therapy, some (not all) problem drinkers can learn the skills necessary to drink socially without losing control (Cunningham et al., 1999; Peele, 1992; Sobell & Sobell, 1978). Advocates of this treatment—**controlled drinking**—generally suggest that it is most successful with younger drinkers who

have less serious drinking problems and who are not yet physically dependent on alcohol (Marlatt, 1983; Polich et al., 1981).

Whatever treatment approach is used, social support is essential; this can be provided by friends, family members, therapists, or members of self-help groups. Alcoholics who have such support are often able to quit on their own, without any formal treatment. The key seems to involve developing the motivation to quit drinking and then doing so with the encouragement and support of others.

Exercise: Keeping Fit Is Healthy

What are some benefits of regular aerobic exercise?

For years medical experts, especially health psychologists, have promoted regular exercise. Yet “only 15 percent of the general population is highly active, and as much as 70 percent of the entire population can be characterized as inactive” (Rodin & Salovey, 1989, p. 554). Many studies show that regular **aerobic exercise** pays rich dividends in the form of physical and mental fitness.

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Regular aerobic exercise improves cardiovascular fitness in people of all ages and helps moderate the effects of stress.

controlled drinking: A behavioural approach in the treatment of alcoholism, designed to teach alcoholics the skills necessary to drink socially without losing control.

aerobic exercise (ah-RO-bik): Exercise involving the use of large muscle groups in continuous, repetitive action and requiring increased oxygen intake and increased breathing and heart rates.

Aerobic exercise (such as running, swimming, brisk walking, bicycling, rowing, and jumping rope) is exercise that uses the large muscle groups in continuous, repetitive action and requires increased oxygen intake and increased breathing and heart rates. Aerobic exercise should be performed regularly—three or four times a week for 20 to 30 minutes, with additional five- to ten-minute warm-up and cool-down periods (Alpert et al., 1990; Shepard, 1986). Less than 20 minutes of aerobic exercise three times a week has “no measurable effect on the heart,” and more than three hours per week “is not known to reduce cardiovascular risk any further” (Simon, 1988, p. 3).

The importance of regular, systematic aerobic exercise in keeping the cardiovascular system healthy cannot be overemphasized. This is true for people of all ages. Even preschoolers receive cardiovascular benefits from planned exercise (Alpert et al., 1990). At the other end of the age spectrum, regular, planned exercise yields dramatic increases in muscle and bone strength in older people. Exercisers between the ages of 87 and 96 who were on a weight-lifting program for only two months showed the same absolute gains in rate of muscular strength as younger people (Allison, 1991). Strenuous workouts would not transform a Bob Hope into an Arnold Schwarzenegger, but significant increases in muscle strength have been recorded even in people pushing 100.

We do not need to become marathon runners or spend several hours a day sweating and grunting in a

fitness centre to enjoy the maximum benefits of exercise. Low-intensity physical training improves physical fitness in older adults (DeVito et al., 1997). Even a daily brisk walk of 30 minutes or more helps to reduce stress and yields the fitness standard associated with a much lower death rate.

In case you are not yet convinced, consider the following benefits of exercise.

- It increases the efficiency of the heart, enabling it to pump more blood with each beat; it reduces the resting pulse rate and improves circulation.
- It raises HDL (good blood cholesterol) levels; this helps rid the body of LDL (bad blood cholesterol) and also removes plaque buildup on artery walls.
- It burns up extra calories, enabling you to lose weight or maintain your weight.
- It makes bones denser and stronger; this helps prevent osteoporosis in women.
- It moderates the effects of stress.
- It gives you more energy and increases your resistance to fatigue.
- It benefits the immune system by increasing natural killer cell activity (Fiatarone et al., 1988).

If you are a couch potato, you watch a lot of TV, and TV is a valued part of your social life, you might be in trouble! Donald McCreary, working in the health

Lifestyle and Health

1. Which is the most important factor leading to disease and death?
 - a. unhealthy lifestyle
 - b. a poor health care system
 - c. environmental hazards
 - d. genetic disorders
2. Which health-compromising behaviour is responsible for the most deaths?
 - a. overeating
 - b. smoking
 - c. lack of exercise
 - d. excessive alcohol use
3. (Alcohol/Smoking) damages virtually every organ in the body.
4. To improve cardiovascular fitness, aerobic exercise should be done
 - a. 15 minutes daily.
 - b. 1 hour daily.
 - c. 20 to 30 minutes daily.
 - d. 20 to 30 minutes 3 or 4 times a week

Answers: 1. a 2. b 3. Alcohol 4. d

area in Regina, and Stanly Sadava, at Brock University (2000), looked at the relation between TV viewing and health, weight, and physical fitness. Women who spent a lot of time watching TV believed they were in poorer health. Overall, both men and women who

watched a lot of TV thought they were overweight more so than people who watched less TV. To feel better about yourself, you might want to get out and take a walk.

Managing Stress

Apply It!

Anyone who is alive is subject to stress, but some of us are more negatively affected by it than others.

If stress leaves you fretting and fuming, with your muscles in knots, try a few relaxation techniques.

Progressive Relaxation

The fight-or-flight response is our body's way of preparing us to deal with a threat. If we can neither fight nor flee, we are left with intense physiological arousal, or stress. There are several relaxation techniques that you can use to calm yourself and relieve muscle tension. Probably the most widely used relaxation technique is progressive relaxation (Rice, 1987). It consists of flexing and relaxing the different muscle groups throughout the body from the head to the toes. Here's how to do it:

1. Loosen or remove any tight-fitting clothing, take off your shoes, and situate yourself comfortably in an armchair with your arms resting on the chair's arms. Sit straight in the chair, but let your head fall forward so that your chin rests comfortably on your chest. Place your feet flat on the floor with your legs slightly apart in a comfortable position.
2. Take a deep breath. Hold the breath for a few seconds and then exhale slowly and completely. Repeat several times. Notice the tension in your

chest as you hold the breath, and the relaxation as you let the breath out.

3. Flex the muscles in your right upper arm (in your left arm if you are left-handed). Hold the muscles as tight as you can for about 10 seconds. Feel the tension. Now relax the muscles completely and observe the feeling of relaxation. Repeat the flexing and the relaxing several times. Then do the same with the other arm.
4. After completing the opening routine with your arms, continue the procedure, tensing and then relaxing a group of muscles, starting with the muscles in the forehead. Progressively work your way down through all the muscle groups in the body, ending with your feet.

Managing Mental Stress

When we become angry, hostile, fearful, worried, and upset by things we

think are going to happen, we cause our hearts to pound and our stomachs to churn. How often have you done this to yourself only to find that what you had imagined never actually materialized? The next time you begin to react to something you think will happen, stop yourself. Learn to use your own thinking to reduce stress, not create it.

Stress-Inoculation Training

Stress-inoculation training is a program designed by psychologist Donald Meichenbaum (1977) at the University of Waterloo. Test anxiety, stress over personal and social relationships, and various types of performance anxiety have been successfully treated with stress inoculation. Individuals are taught to recognize their own negative thoughts ("I'll never be able to do this" or "I'll probably make a fool of myself"), and to replace negative thoughts with positive ones. They learn how to talk to themselves using posi-

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Image omitted due to copyright restrictions.

tive coping statements to dispel worry and provide self-encouragement. Here are some examples of these coping statements (adapted from Meichenbaum, 1977):

Preparing for the stressor

“I can come up with a plan to handle the problem.”

Facing or confronting the stressor

“If I take one step at a time, I know that I can handle this situation.”

Coping with the stressor

“I will keep my mind focused on the present, on what is happening now, and just concentrate on what I have to do.”

When the coping attempt is finished

“I am really making progress.”

Taking a Breather

To counteract the shallow, rapid breathing that occurs when you are

stressed, you need to take deep abdominal breaths. To learn how, place one hand on your chest and the other on your abdomen. Practise inhaling in such a way that your abdomen, not your chest, rises. Once you are able to do this, you are ready to learn how to “take a breather” to counteract stress.

1. Slowly exhale through your mouth to remove the stale air from your lungs. Repeat until your lungs feel empty.
2. Inhale through your nose until your abdomen (not your lungs) begins to rise. Hold for five seconds, and then exhale.
3. Repeat four or five times whenever you feel tense and irritable.

Working Off Stress

Blow off steam physically by exercising or engaging in physical work (raking leaves, gardening, cleaning). Physical

activity will provide a “fight” outlet for your mental stress.

Other Stress-Reducing Measures

Here are some additional suggestions for reducing the negative effects of stress.

- Make time for relaxation and activities you enjoy.
- Rely on social support to moderate the effects of stress.
- Don't expect perfection from yourself or from other people.
- If you suffer from “hurry sickness,” slow down.
- Learn to be patient.
- Avoid overeating, drinking, or using drugs.
- Eat a balanced diet and get enough sleep.
- Use caffeine in moderation.

KEY TERMS

aerobic exercise, p. 373

alarm stage, p. 356

approach–approach conflict, p. 360

approach–avoidance conflict, p. 360

avoidance–avoidance conflict, p. 360

biomedical model, p. 354

biopsychosocial model, p. 354

controlled drinking, p. 373

coping, p. 362

emotion-focused coping, p. 363

exhaustion stage, p. 357

general adaptation syndrome (GAS), p. 356

hardiness, p. 370

hassles, p. 366

health psychology, p. 354

posttraumatic stress disorder (PTSD), p. 361

primary appraisal, p. 358

problem-focused coping, p. 362

psychoneuroimmunology, p. 369

resistance stage, p. 356

secondary appraisal, p. 359

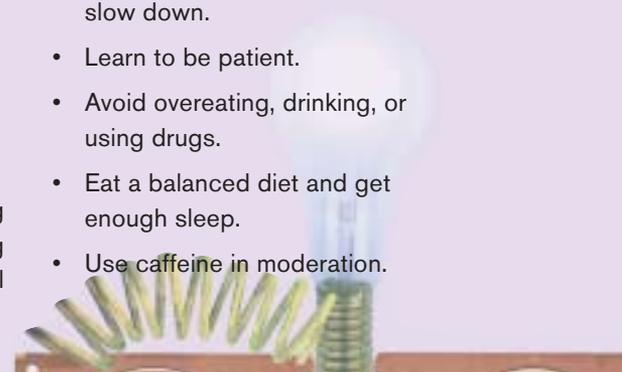
Social Readjustment Rating Scale (SRRS), p. 364

social support, p. 370

stress, p. 355

stressor, p. 356

uplifts, p. 366



THINKING CRITICALLY

Evaluation

Can people always cure themselves of illnesses? What are the limits to what people can do to help themselves?

Point/Counterpoint

Prepare two arguments, one supporting the position that alcoholism is a genetically inherited disease, and the other supporting the position that alcoholism is not a medical disease but results from learning.

Psychology in Your Life

Choose several stress-producing incidents from your own life and explain what problem-focused and emotion-focused coping strategies you used. From the knowledge you have gained in this chapter, list other coping strategies that might have been more effective.

SUMMARY & REVIEW

Two Approaches to Health and Illness

How do the biomedical and biopsychosocial models differ in their approaches to health and illness?

The biomedical model focuses on illness rather than on health and explains illness in terms of biological factors. The biopsychosocial model focuses on health as well as on illness and holds that both are determined by a combination of biological, psychological, and social factors.

Theories of Stress

What is the general adaptation syndrome?

The general adaptation syndrome is the predictable sequence of reactions that organisms show in response to stressors. It consists of the alarm stage, the resistance stage, and the exhaustion stage.

What are the roles of primary and secondary appraisal when people are confronted with a potentially stressful event?

Lazarus maintains that when we are confronted with a potentially stressful event, we engage in a cognitive appraisal process consisting of (1) a primary appraisal, to evaluate the relevance of the event to our well-being (whether it will be positive, will be irrelevant, or will involve harm or loss, threat, or challenge); and (2) a secondary appraisal to determine how we will cope with the stressor.

Sources of Stress: The Common and the Extreme

How do approach–approach, avoidance–avoidance, and approach–avoidance conflicts differ?

In an approach–approach conflict, we must decide between equally desirable alternatives; in an avoidance–avoidance conflict, between two undesirable alternatives. In an approach–avoidance conflict, we are both drawn to and repelled by a choice.

How do the unpredictability of and lack of control over a stressor affect its impact?

Stressors that are unpredictable and uncontrollable are more stressful than those that are predictable and controllable.

How do people typically react to catastrophic events?

Victims of catastrophic events are initially dazed and stunned. When they begin to recover from the shock, they typically experience anxiety, nightmares, and a compulsive need to retell the event over and over.

What is posttraumatic stress disorder?

Posttraumatic stress disorder (PTSD) is a prolonged, severe stress reaction to a catastrophic event; the victim relives the trauma in flashbacks, nightmares, or intrusive memories.

Coping with Stress

What is the difference between problem-focused and emotion-focused coping?

Problem-focused coping is a response aimed at reducing, modifying, or eliminating the source of stress; emotion-focused coping is aimed at reducing the emotional impact of the stressor.

Evaluating Life Stress: Major Life Changes, Hassles, and Uplifts

What is the Social Readjustment Rating Scale designed to reveal?

The SRRS assesses stress in terms of life events that necessitate life change. Holmes and Rahe found a relationship between degree of life stress (as measured on the scale) and major health problems.

What roles do hassles and uplifts play in the stress of life, according to Lazarus?

According to Lazarus, daily hassles typically cause more stress than major life changes. The positive experiences in life—the uplifts—can neutralize the effects of many of the hassles.

Health and Disease

What can cancer patients do to help them cope with having cancer?

Cancer patients need medical treatment and social support that will help them maintain their quality of life. They need to have opportunities to discuss their treatment and emotions openly. In addition, if the patient maintains an optimistic outlook and is able to accept their condition, they may experience less distress.

What happens to a person from the time of infection with HIV to the development of full-blown AIDS?

When a person is initially infected with HIV, the body begins to produce HIV antibodies, eventually detectable in a blood test. For a period of time, the victim has no symptoms, but HIV gradually renders the immune system non-functional. The diagnosis of AIDS is made when the person succumbs to various opportunistic infections.

What are the effects of stress and depression on the immune system?

Both stress and depression have been associated with lowered immune response, and stress has been linked to increased symptoms of various infectious diseases.

What three personal factors are associated with health and resistance to stress?

Personal factors related to health and resistance to stress are optimism, psychological hardiness, and social support.

Your Lifestyle and Your Health

What constitutes an unhealthy lifestyle, and how serious a factor is lifestyle in illness and disease?

Slightly over 50 percent of all deaths in this country can be attributed to unhealthy lifestyle factors, which include smoking, overeating, an unhealthy diet, too much coffee or alcohol, drug abuse, and/or too little exercise and rest.

Why is smoking considered the single most preventable cause of death?

Because each year in Canada, smoking results in tens of thousands of deaths from heart disease, cancer, lung disease, and stroke.

What are some health risks of alcohol consumption?

Alcohol damages virtually every organ in the body, including the liver, stomach, skeletal muscles, heart, and brain.

What are some benefits of regular aerobic exercise?

Regular aerobic exercise reduces risk of cardiovascular disease, increases muscle strength, moderates the effects of stress, makes bones denser and stronger, and helps maintain a desirable weight.

