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There's More Online!

- CHART The Fight-or-Flight Response
- GRAPHIC ORGANIZER
- SELF-CHECK QUIZ

LESSON 2
Reactions to Stress

ESSENTIAL QUESTION • *How does stress influence behavior?*

Reading HELPDESK

Academic Vocabulary

- link
- exhibit

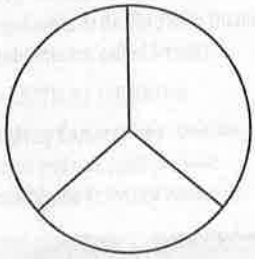
Content Vocabulary

- social support

TAKING NOTES:
Craft and Structure

DESCRIBING Use a graphic organizer like the one below to identify and describe the stages of the general adaptation syndrome.

General Adaptation Syndrome



It Matters Because

People react differently to life's stressors. These reactions may be beneficial or harmful to the body and the mind. Sometimes people have trouble getting over life's difficulties. They may feel anger, anxiety, or fear. Knowing how to deal with stress can help people cope and react to stress in a more positive way.

Responding to Stress

GUIDING QUESTION *What is the fight-or-flight response?*

A person who encounters a stressor that is intense or prolonged will react to it. There are a wide variety of stress reactions, and their effects range from beneficial to harmful. For example, someone who does not do well in school may react in a negative way—acting out, pouting, or feeling bad. Eventually that person may find an academic subject in which to excel. Should this happen the person's reactions to stressors in school may have changed from negative to positive and the person will more likely succeed.

Many of the physiological responses to stress are inborn methods that probably evolved to cope with stress effectively. In addition, many responses to stress are automatic. Just as the body reacts to a cut by producing new tissue, it has methods to heal the wounds of stress—crying, for example.

Coping mechanisms that worked for our remote ancestors are not necessarily successful in our modern technological society. Human beings are often slow to give up anything that is well established. We are more likely to depend solely on these ancient stress responses than to make conscious attempts to modify them or adopt others that we now know are more appropriate to our modern lifestyle.

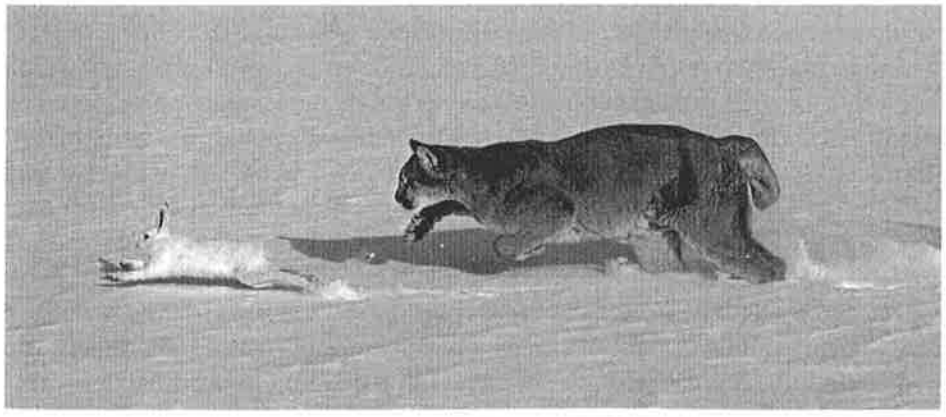
The ways in which different people react to stress vary considerably; each person's response is the product of many factors. Stress reactions may be physical, psychological, or behavioral, but these categories are not clear-cut. The human body is a *holistic*, or fully integrated, organism, and a negative effect in one area can affect others. Our physical well-being affects how we think and behave. For example, poor mental health can trigger physical illness or psychological illness. Research from the

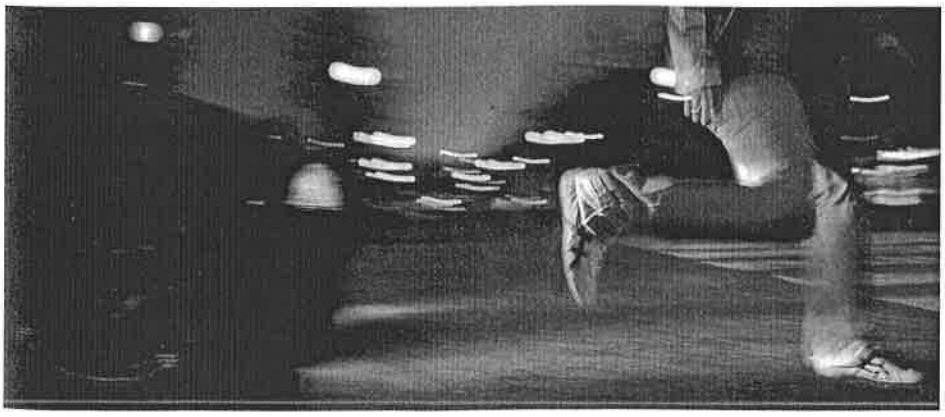
Centers for Disease Control and Prevention (CDC) indicates that there is a strong correlation between mental and physical illnesses. For example, psychological disorders such as depression and anxiety are strongly associated with illnesses like cardiac disease, the common cold, and asthma. Chronic stress increases the likelihood of all these conditions.

Regardless of the stressor, the body reacts with immediate arousal. The adrenal glands are stimulated to produce: (a) hormones that increase the amount of blood sugar for extra energy; and (b) adrenaline, which causes rapid heartbeat and breathing and enables the body to use energy more quickly. These responses are designed to prepare a person for self-defense and are often called the *fight-or-flight response*. Wild animals experience the fight-or-flight response in reaction to attacks. This response is needed for survival. Although you do not need to fight wild animals, the fight-or-flight response prepares you in the same way to face potentially dangerous situations. However, if stress persists for a long time, the body's resources are used up. The person becomes exhausted and, in extreme cases, dies.

General Adaptation Syndrome

Hans Selye identified three stages in the body's stress reaction: alarm, resistance, and exhaustion. Selye called these short-term and long-term reactions to stressors the *general adaptation syndrome*. In the *alarm* stage, the body reacts to a stressor by mobilizing its fight-or-flight defenses. The heartbeat and breathing quicken, muscles tense, the pupils dilate, and hormones that sustain these reactions are secreted. The person becomes exceptionally alert and sensitive to stimuli in the environment and tries to keep a firm grip on his or her emotions. For example, a hiker who confronts a rattlesnake on a mountain trail freezes in his tracks, is suddenly aware of every sound around him, and tries not to panic. If the alarm reaction is insufficient to deal with the stressor, the person may develop symptoms such as anxiety.





When an animal senses possible danger, its nervous system directs great sources of blood to its muscles and brain, preparing the creature for rapid action. You react the same way.

CRITICAL THINKING

Analyzing How is stress necessary for survival?

More ABOUT...

Panic Attacks

Imagine that you are excited about going to a friend's party, but when you walk into the house, you suddenly start to feel different. Your heart begins to race, you start to sweat, it becomes harder to breath, and your hands start to tingle. In short, you feel like you are "losing control." You could very well be experiencing a panic attack, a sudden feeling of terror or fear that can strike without warning. People who experience panic attacks may have such overwhelming feelings of panic that they believe they are having a heart attack, going crazy, or could even die.

While there is no real danger during a panic attack, the strong physical reactions are very real. Panic attacks are a type of anxiety disorder that affect approximately 3 percent of the adult U.S. population and around 2 percent of the teenage U.S. population. No one knows exactly why some people experience panic disorder while others do not. It could be related to a significant life event. However, it is known that panic disorder sometimes runs in families.

So what should you do if you experience a panic attack? First, in the moment of an attack, start by telling yourself to calm down and focus on breathing deeply. If the attacks persist, recognize that something is wrong and make an appointment to talk to a doctor about what you are experiencing. Depending on your symptoms, your doctor may prescribe psychotherapy, medication, or both to help you deal with the attacks.

In the *resistance* stage, the person often finds means to cope with the stressor and to ward off, superficially at least, adverse reactions. Blood pressure remains high and the body continues to secrete stress-fighting hormones. If this stress response continues, the body is thrown off-balance. The person is likely to have problems concentrating and may become irritable. Thus an isolated high-mountain hiker, caught off guard by a sudden blizzard, can use his knowledge of the mountains to shelter himself. When his food runs out, though, all of his activities gradually deplete his internal reserves. At this stage, the person may suffer psychosomatic symptoms, which result from strain that he pretends is nonexistent. Psychosomatic symptoms are real, physical symptoms that are caused by stress or tension.

If exposure to the stressor continues, the individual reaches the stage of *exhaustion*. At this point, the adrenal and other glands involved in the fight-or-flight response have been taxed to their limits and become unable to secrete hormones. The individual may reach the breaking point. He or she becomes exhausted and disoriented and may develop delusions—of persecution, for example—in an effort to retain some type of coping strategy. The military is aware of this type of exhaustion in soldiers who have been exposed to prolonged periods of combat. Both visual and auditory hallucinations can continue to occur, even longer after the individual has left the military.

The problem is that the very responses that were good for immediate resistance to stress, such as reducing digestion and boosting blood pressure, are detrimental in the long run. Some investigators have found that assembly-line workers in repetitive jobs over which they exercise very little control are likely to show the effects of stress. It is not surprising that the corporate executives running the company, who can control their own destiny to some degree, are less likely to show such stress. Farmers with high control over their work show very low susceptibility to chronic heart disease.

Emotional and Cognitive Responses

Short-term psychological stress reactions may be either emotional or cognitive. The most common response to a sudden and powerful stressor is anxiety, which is a feeling of an imminent but unclear threat. An employee whose boss passes by in the hall without saying hello may develop anxiety about her future on the job. Short-term feelings of extreme anxiety can occur if a person feels trapped in a situation he or she cannot control. For example, in medicine, magnetic resonance imaging (MRI) machines are used to obtain body images that aid in diagnosing medical conditions. The individual typically must lie quietly inside a metal chamber. In some people, this triggers feelings of claustrophobia, which is an irrational fear of being trapped in closed places. They panic and their blood pressure and heart rate spike dramatically. To counteract this situation, more open, less tube-like MRI equipment has been developed in recent years.

Another common reaction is anger, which is likely to result from frustration. A student who does not make the lacrosse team may fly into a rage over a completely unrelated, minor incident such as the sound failing in one of his MP3 player's earbuds. Fear is usually the reaction when a stressor involves real danger—a fire, for example. Fear directs the individual to withdraw or flee, but in severe cases he or she may panic and be unable to act. Common examples of short-term emotional stress reactions are overreacting to minor irritations, getting no joy from daily pleasures, and doubting one's own abilities, while feeling tense, short-tempered, and more anxious.

Cognitive reactions to stress include difficulty in concentrating or thinking clearly, recurring thoughts, confusion, and poor decision making. A student who must give an oral presentation may worry about the upcoming ordeal but find

himself unable to prepare for it. A college student drives to her hometown to surprise her parents in person with the news that she has been admitted to graduate school, but when she gets to town, she cannot remember how to find the house she grew up in. Another type of cognitive stress reaction is unjustified suspicion or distrust of others.

Continued frustration can lead to burnout. People feel *burned out* when they feel they are incapable of doing their job well. They may feel physically worn out and emotionally exhausted from giving too much time or energy to a project while not receiving sufficient gratification. Prolonged stress, such as burnout, in combination with other factors, adversely affects mental health. It does not necessarily cause mental illness, but it may contribute to the severity of mental illness. There is an increased likelihood of developing a psychological disorder following a major life change, for example. Among those who attempt suicide and those with depression or anxiety-based disorders, there seems to be quite a definite **link** between stress and subsequent symptoms.

A psychological disorder called *post-traumatic stress disorder* is a condition in which a person who has experienced a traumatic event feels severe and long-lasting aftereffects. This disorder is common among veterans of military combat and survivors of acts of terrorism, natural disasters such as floods and tornadoes, other catastrophes such as plane crashes, and acts of human aggression such as rape and assault. The event that triggers the disorder overwhelms a person's normal sense of reality and ability to cope. The high stress levels associated with this disorder could result in a range of psychosomatic symptoms, such as insomnia, high blood pressure, chest pain, and stomach problems.

☑ READING PROGRESS CHECK

Summarizing How does the fight-or-flight response help people to deal with stressors in their lives?

Behavioral and Physical Reactions

GUIDING QUESTION *How does stress affect people physically?*

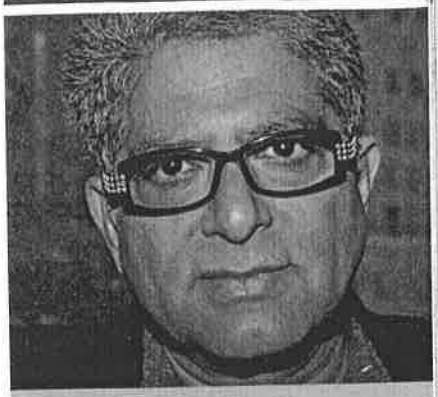
When we are under stress, our bodies respond in a variety of ways. Have you ever been under so much stress you were not able to sit still? Or alternately, maybe you slept more than usual just to avoid dealing with the situation. Both of these are examples of behavioral reactions. Our bodies also can have physical reactions to stress. If you have ever had an upset stomach before a big game or your performance in a play, you know about this kind of reaction. It is so common there is even an expression for it—having "butterflies" in your stomach.

Behavioral Reactions

There are many short-term behavioral changes that result from stress. A person may develop nervous habits (pacing, for example), gulp meals, or feel tired for no reason. That person may develop a shaky voice, tremors, strained expressions, or a hunched posture. He or she may temporarily lose interest in eating, grooming, and bathing. Some people react to stress by behaving aggressively toward their family members or strangers.

Some behavioral reactions are positive, however. During a natural disaster, some people will risk their lives to save or help others. Such stressors often create attitudes of cooperation that override individual differences and disagreements. During the stress of combat, well-trained soldiers can draw on the strength of their comrades to react in positive ways that can save the lives of both themselves and those around them.

Profiles in Psychology



Deepak Chopra
(1946–)

Dr. Deepak Chopra is a major figure in the trend of holistic healing. *Holistic healing* refers to the idea that a person's mind and body are not independent matters; they function together as a unit. Chopra blends Western medicine with the techniques of an ancient health care called Ayurveda. He believes that healing is a process that involves integrating the mind and the body, which is a basic idea behind Ayurveda.

Chopra argues that what we think and feel can actually change our biology. He believes that by finding an inner peace and by relieving the stress of living, we can become healthy in mind and body.

Chopra is a fellow of the American College of Physicians and a member of the American Association of Clinical Endocrinologists. He is a popular writer and adviser because he helps many people get past the problems of daily existence and find pleasure in life.

▶ CRITICAL THINKING

Finding the Main Idea What does Chopra believe about the healing process?

link a connection between two or more things

Although some people can endure great amounts of stress without marked behavioral responses, others cannot. Severe stress can lead to the development of escapist reactions and behaviors—alcoholism, drug addiction, chronic unemployment, and attempted suicide, for example. An inability to cope with stress can also contribute to aggressive personality formation, delinquency, and criminal behavior.

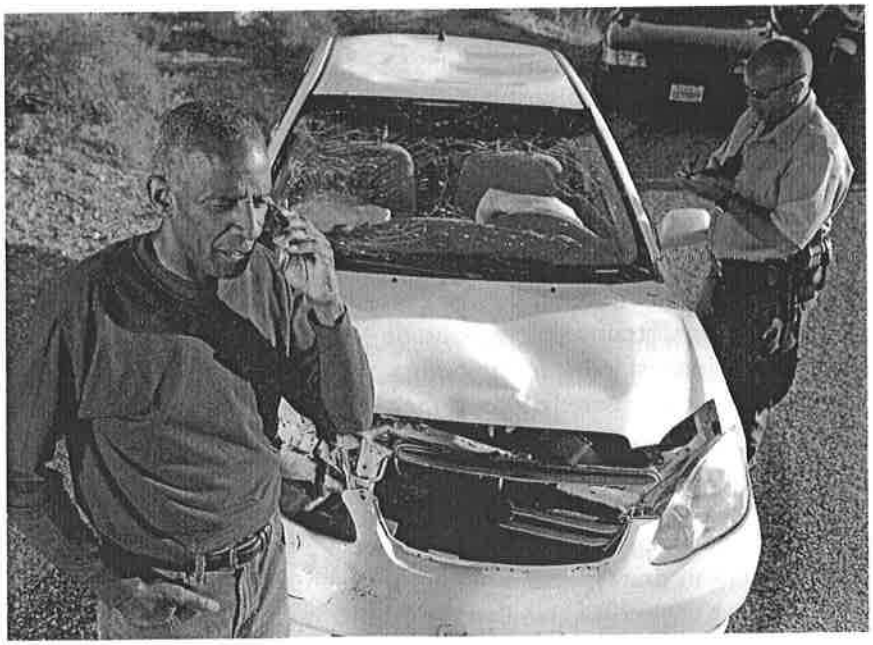
Research has shown that individuals who have greater coping skills are less likely to return to their negative behaviors in times of stress. For example, recovering alcoholics who experience psychological stress are likely to return to drinking. The more severe the person views the stress, the greater the likelihood drinking will start again. Individuals find it difficult to overcome a deep-seated coping strategy, even when it has severe negative consequences.

Physical Reactions

Why do daily hassles and major life changes sometimes make people ill? Your thoughts and emotions can produce physiological changes in your body. For example, some people develop *psychosomatic symptoms* as a result of stress. As mentioned earlier, psychosomatic symptoms are real, physical symptoms caused by stress or tension such as headaches, stomachaches, and muscle pains.

The physiological fight-or-flight response—accelerated heart rate and so on—is the body's immediate reaction to stress. This response, geared to prepare human beings to fight or run from an enemy such as a savage animal or band of warriors, was probably useful earlier in human history. We cannot deal with most modern stressors in this manner, and physical responses to stress are now generally inappropriate. In fact, prolonged physical arousal from almost any stress can cause health problems, including difficulty breathing, insomnia, migraines, urinary and bowel irregularities, muscle aches, sweating, and dryness of mouth.

Stress is certainly one cause of illness. We have already discussed the study that linked low scores on the Holmes-Rahe scale to reports of good health for the following year, while high scores were linked with illness in the following year. Emotional stress is related to such illnesses as peptic ulcers, hypertension, certain kinds of arthritis, asthma, and heart disease. Those who work in high-stress occupations may pay a high price. Air-traffic controllers, for example, juggle hundreds of lives where a minor error can mean mass death. They are said to suffer from the



Our reactions to various events depend on our personalities and on the severity of the event itself. The person who was in the car accident is facing a different level and kind of stress than someone who is waiting with a person coping with a terminal illness or waiting for a job interview.

▶ **CRITICAL THINKING**

Identifying Cause and Effect What happens during the resistance stage of stress?

1. You appraise a situation as physically or psychologically threatening.

2. Your thoughts activate the hypothalamus (in the brain). The hypothalamus stimulates the pituitary gland to secrete ACTH (adrenocorticotopic hormone)—a stress-fighting hormone. The hypothalamus also activates the sympathetic division of the autonomic nervous system.

3. The sympathetic nervous system stimulates a variety of physical responses to prepare the body for the stressful situation—this is the fight-or-flight response. (The parasympathetic nervous system later returns the body to its normal state.)

Fight-or-Flight Response:

- heart rate increases
- blood pressure increases
- respiration becomes rapid and shallow
- liver releases stores of glycogen, raising blood sugar level
- digestive system shuts down and blood reroutes to muscles
- pupils dilate
- hair stands up on end
- excitatory hormones are secreted (epinephrine and norepinephrine)
- muscles tense

highest incidence of peptic ulcers of any professional group. Further, air-traffic controllers at busy, high-stress airports have more ulcers than those at low-stress airports. Repeated instances of stress can weaken the body and its natural defenses, and as a result illness may follow.

Stress can be at least partly responsible for almost *any* disease, as shown by the scope of illness associated with high Holmes-Rahe scores. Stress can contribute to disease in several ways. Sometimes it can be the direct cause of illness. A migraine headache, for example, is usually a physical reaction to stress. Stress may also contribute indirectly to illness. It reduces our resistance to infectious disease by weakening the immune defense system. The immune system is your body's natural defense system against infection, and a gradual weakening of it through stress can have drastic consequences.

Consider a cold you may have caught right in the middle of final exams week. Why did this happen? When you experience stressful situations for a long period of time, it decreases your immune system's ability to cope. Your body is constantly exposed to millions of pathogens (disease-causing bacteria or viruses). When these pathogens enter your body, they attack your cells and use them to grow and multiply. The end result is an infection. Most of the time your body manages to stay free of infection because of the immune system. However, recall the third stage of Selye's general adaptation syndrome—exhaustion. When your body is continually involved in the fight-or-flight response, you become exhausted, and the immune system is suppressed. Your body becomes more susceptible to the diseases and infections caused by the pathogens that continually assault it.

READING PROGRESS CHECK

Summarizing How can stress affect the body's behavior?

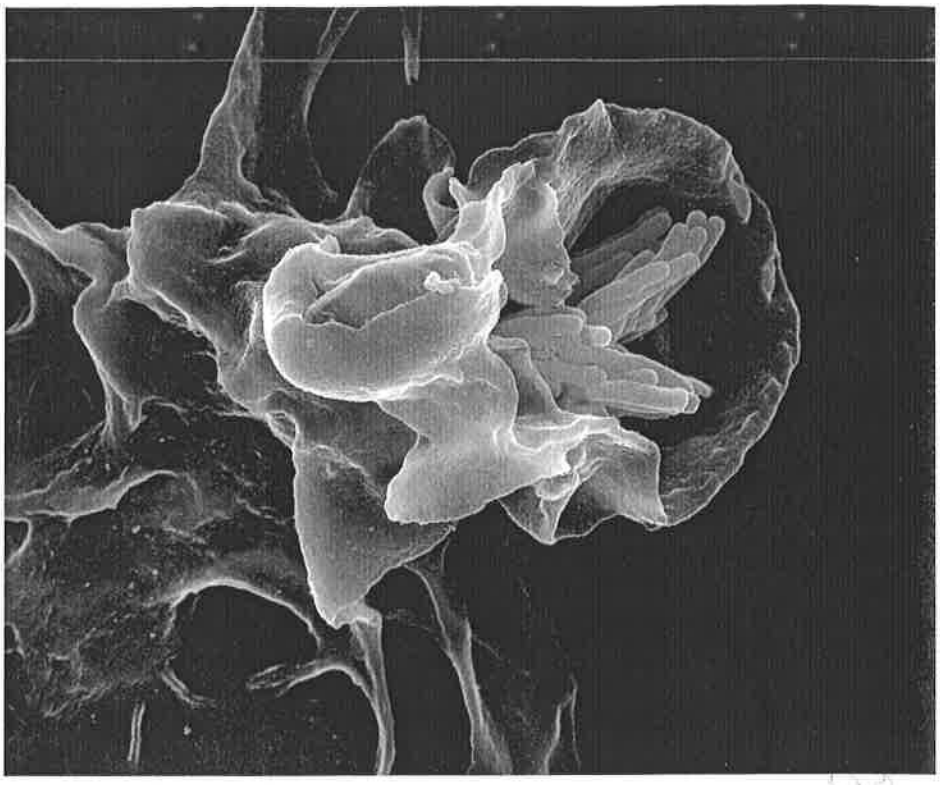
< CHART

THE FIGHT-OR-FLIGHT RESPONSE

Our fight-or-flight response is triggered by potentially dangerous or stressful situations, such as a scare in the middle of the night or giving a speech in public. As soon as you feel threatened, your body prepares itself for action.

CRITICAL THINKING

1. ***Identifying Cause and Effect*** Why do our pupils dilate during the fight-or-flight reaction? Why do our muscles tense?
2. ***Analyzing Visuals*** What part of your brain is activated when a situation is deemed to be physically or psychologically threatening?



An immune system cell attacks a foreign invader—a bacteria cell. When the immune system is not suppressed by stress, for instance, it destroys pathogens that enter the body.

▶ **CRITICAL THINKING**

Identifying Cause and Effect What effect does the fight-or-flight response have on your immune system?

Factors Influencing Reactions to Stress

GUIDING QUESTION *How do different personality types respond to stressors differently?*

Imagine two assistant managers who work at two different stores. Both of the existing store managers suddenly leave their jobs and the assistant managers, both equally trained, unexpectedly find themselves promoted to store managers. The first one, Serena, sees this as the opportunity of a lifetime. She is optimistic she will succeed, has been well trained, and feels she has the support of the store's employees. She looks forward to this new challenge. The second one, Jared, feels pressured to prove himself. He is pessimistic because he does not believe that he has had enough training or experience. Jared is afraid the employees will compare him unfavorably with their previous manager. He thinks that he will fail publicly in this new challenge. Both Serena and Jared are confronted with similar stresses but have entirely different reactions. People's reactions to stress vary considerably. These reactions help people meet challenges in life, but they may also determine the type of stress one feels.

Personality Differences

exhibit to demonstrate or show clearly

In some cases, an individual's personality may make him or her more vulnerable to stress. Some psychologists have suggested that people who **exhibit** a behavior pattern they call Type A are very likely to have coronary artery disease, often followed by heart attacks, in their thirties and forties. According to one study, those who do not have this pattern (Type B people) almost never have heart attacks before the age of 70.

Whereas Type B people are generally relaxed, patient, and do not become angry easily, the Type A person's body is in a chronic state of stress with an almost constant flow of adrenaline into the bloodstream. This adrenaline apparently interacts with cholesterol or other chemical agents to block the coronary arteries that lead to the heart. It may be that high levels of adrenaline prevent the normal chemical breakdown of cholesterol in the blood.

Type A people are always prepared for fight or flight. They have a great deal of free-floating hostility, or anger that has no real focus. They are extremely irritable, and one thing that irritates Type A people the most is delay of any kind. They become impatient waiting in line, tend to move and eat rapidly, often try to do two or three things at once (such as reading while eating), and feel guilty when they are not actively doing something. They are also extremely competitive. In short, Type A people are always struggling—with time, other people, or both. Note that this describes an extreme version of the Type A personality. Most people respond to the world with Type A behavior at different times, but they are not in a constant state of stress. It is important to note that psychologists disagree about both the definition of Type A personality and its relation to heart disease.

In the 1950s two cardiologists, Dr. Meyer Friedman and Dr. Ray H. Rosenman, first came up with the concept of a Type A personality. They also studied how this personality type might be linked to an increased risk of coronary heart disease. At that time Freidman and Rosenman found themselves spending a great deal of money reupholstering chairs in their office waiting room. It turned out the upholstery on the front of the chairs was being worn out and literally "torn to shreds." When the upholsterer examined the chairs, he said he had never before seen this kind of damage. Chairs in the waiting rooms of other physicians, such as podiatrists and urologists, did not get destroyed like this—only the cardiologists. They discovered that the patients were sitting on the edges of their chairs, "fidgeting and clawing away." Friedman originally ignored what the upholsterer had pointed out, but four years later, when he was conducting research on the causes of heart disease, he remembered what the upholsterer had said. At that point Dr. Friedman began to recognize the link between the inability of this group of people to relax and their increased risk of coronary artery disease. From this experience, Doctors Friedman and Rosenman first proposed the concept of the Type A personality.

Another personality trait that can affect the strength of a stress reaction is emotional expressiveness. Some research suggests that people who neither express nor admit to strong feelings of despair, depression, and anger are more likely to develop cancer than those who can give vent to their emotions. Some investigators have proposed a cancer-prone behavior pattern. People who deny their negative emotions tend to express feelings less freely, show a high tendency toward social conformity, and have a greater risk of getting cancer. Negative life events, such as those measured by the Social Readjustment Rating Scale, do seem to be related to an increased likelihood of cancer in later life.

Some people react to stress by continually dwelling on negative feelings or repeatedly telling themselves "I feel terrible" or "I never do anything right." In the field of psychology, constant dwelling on such thoughts is called *rumination*. Psychology professor Susan Nolen-Hoeksema has conducted research on rumination that shows people who ruminate have a higher than normal incidence of depression and anxiety disorders. For example, one of Nolen-Hoeksema's studies showed that in people who had lost a loved one, those who reported dwelling on the loss had more symptoms of depression than those who did not.

Spirituality

Studies have shown that people with strong spiritual beliefs often have less stress than others. Spirituality can be defined in many ways. Some people think it means believing in a power greater than themselves. Some find comfort in religious observance, prayer, or meditation. Others think it refers to having a sense of purpose in life, an idea that life has meaning. Releasing responsibility for uncontrollable events in life is a great stress reliever. Recognizing that there is more to life than just the here and now relieves stress in some people.

Psychology & YOU

Road Rage

You may have witnessed road rage, or the inability to handle frustrations while driving. Road rage involves a desire to retaliate and punish another driver. It may result in criminal behavior, such as violence or threatened violence. Some psychological studies have shown that road rage reflects a driver's anger and lack of self-control. In one six-year period, at least 218 people were killed and 12,610 injured as a result of road rage.

What should you do to avoid road rage?

- Do not retaliate against another driver.
- Before reacting, consider if this episode is worth risking your life.
- Be polite and courteous, even when others are not.
- If you are harassed and followed by another driver, go to the nearest police station.
- Slow down, be calm, and drive safely.

More ABOUT...

Gender Differences and Stress

Who has higher stress levels—men or women? Women in the United States are more likely than men to live in poverty, to experience discrimination, and to be sexually or physically abused. Also, some psychologists argue that the traditional roles of women as primary caretakers and wives place them in positions in which anxiety and depression are more likely. For example, mothers are often made to feel responsible for events they have little control over, such as the illness of a child. Taking a job outside the home often reduces psychological stress for women. Studies show that the stress and anxiety experienced by the different genders is more equalized when women take jobs outside the home.

Another way spiritual beliefs reduce stress is by decreasing negative behaviors. The Seventh Day Adventists, for example, are not supposed to smoke tobacco or drink alcohol. Research has shown that Seventh Day Adventist men in the Netherlands live 8.9 years longer than the national average. Many spiritual disciplines encourage forgiveness, which can help people to live in the present and not dwell on past hurts. In addition, religious groups often provide strong social support. For example, they may help families going through serious health problems by providing transportation to doctors' appointments, meals, counseling, or child care. Religious leaders may offer counseling from a spiritual perspective to people experiencing stress over various life changes such as divorce or death. These varied factors show how spirituality can reduce stress and improve a person's overall health.

Perceived Control Over Stressors

The accepted view today is that physical disorders are more likely when we do not have control over stressors. Most evidence to support this theory comes from experiments on animals. J.M. Weiss, for example, gave two groups of rats identical electric shocks. In one group, a rat could avoid the shock by touching its nose to a panel, while the other group had no control over the shocks. The group that could regulate the shocks developed far fewer ulcers than those that could not. Subsequent experiments showed that feedback is also an important factor. Animals that responded to avoid shock and then heard a tone to signal that they had done the right thing suffered fewer ulcers than those that responded to avoid the shock but were given no feedback. Weiss found that lack of feedback could harm human beings as well. His research showed that people develop ulcers when they have to make large numbers of responses but receive no feedback about their effectiveness.

So, in general, people prefer to have predictable stress over unpredictable stress. For example, when you know that a teacher has certain preferences in grading an essay, it makes writing the paper a little easier. If you do not have any idea how the teacher plans to grade the essay, the writing is much harder. In one study, psychologists exposed people to predictable and unpredictable noise, concluding that people may prefer predictable noise because it allows them to prepare and thus cope better.

We previously discussed that many people feel stressed when they are having magnetic resonance imaging (MRI) tests. To a large degree, this stress is caused by a feeling of a loss of control—the patients feel that they are "trapped" inside the MRI machine. To help deal with this stress, the patients may be given a "panic" button. This helps many people relax because they are empowered with the knowledge that if they press the button, they will be removed immediately from the machine, thereby regaining control. Our physical and psychological well-being is profoundly influenced by the degree to which we feel a sense of control over our lives.

There are different methods that we can use to control stress. One way is behavioral control. For example, if you find a certain person annoying, you might avoid being around that individual. A second method is cognitive control—if you cannot change the situation, you can at least change your way of thinking about it. Imagine that you go to your garage only to discover your car tire is flat. You can be annoyed and start feeling stressed or you can think of this as an opportunity to learn how to fix a flat tire. Another method of controlling stress is emotional control. Perhaps you did poorly on a test. Avoiding stress by refusing to dwell on this incident shows emotional control. For most people, emotional control is probably the most difficult method of controlling stress, but we can get better at it with practice.

Social Support and Treatment

Much research has pointed to the importance of social support in helping people work to decrease the effects of stressful situations. Social support and a social support network can buffer an individual from the effects of stress and help them cope. Family, friends, colleagues, coworkers, therapeutic groups, or organizations can be instrumental in providing an overly stressed individual with a caring, stress-reducing support network.

One researcher named Sidney Cobb has defined **social support** as information that leads someone to believe that he or she is cared for, loved, respected, and part of a network of communication and mutual obligation. He has found that social support can reduce both the likelihood and the severity of stress-related diseases—a finding often replicated. Social support benefits have been documented for cancer, crowding, military combat, natural disasters, and AIDS.

social support information that leads someone to believe that he or she is cared for, loved, respected, and part of a network of communication and mutual obligation

Social groups seem to offer at least four kinds of support. First, *emotional* support involves concerned listening, which forms a basis for offering affection and concern and bolstering the stressed person's self-confidence. Second, *appraisal* support is interactive. The listener feeds back information and probing questions to the stressed person as an aid in sorting out, understanding, and planning to deal with the sources of the stress. *Informational* support emerges from appraisal support. Here the stressed person responds to what he or she has learned and evaluates the manner in which he or she is dealing with stressors. Finally, *instrumental* support represents active, positive support in the form of direct help such as money or living quarters.

Yet there is evidence that some friends, despite the best intentions, may be more of a strain than a help in a crisis. Some may prove to be sources of pessimism or discord. Some sources of social support, however, can be especially helpful. Studies of male blue-collar workers have reported that social support from wives and supervisors counteracted the health consequences of stress more effectively than did support from coworkers, friends, or relatives.

READING PROGRESS CHECK

Inferring How might someone with a Type A personality perceive stressors differently from other people?

LESSON 2 REVIEW CCSS

Reviewing Vocabulary

1. ***Explaining*** How does social support reduce stress?

Using Your Notes

2. ***Sequencing*** Use your notes to describe the steps that an individual's body goes through at each stage of the general adaptation syndrome.

Answering the Guiding Questions

3. ***Identifying*** What is the fight-or-flight response?
4. ***Summarizing*** How does stress affect people physically?
5. ***Explaining*** How do different personality types respond to stressors differently?

Writing Activity

6. ***Informative/Explanatory*** Measure a friend's heart rate. Then have the person think of a scary situation. Did their heart rate increase? Choose another person and measure their heart rate. Have the person think of a peaceful, calming situation. Did their heart rate decrease? Write a summary of your findings.

Analyzing

Readings in Psychology

CCSS

Reader's Dictionary

attuned: to be aware of or receptive to
perceive: to regard as being such
gerontology: the study of aging
kinesiology: the study of the mechanics of body movements
inoculation: precaution, as in a vaccination

In our busy world with its high expectations and focus on multitasking, it's not difficult to imagine why stress is on the rise. However, the amount of stress and the way we deal with it may depend on our gender; men report and handle stress differently than women. Researchers are finding that such differences may have implications for both mental and physical health.

Stress
Divides the Genders

By Sharon Jayson

PRIMARY SOURCE

Stressed women know it, live it and spend time trying to do something about it. Stressed men, not so much. That may well be the perception—that women are more aware of feelings than men—and in the wake of new survey results released this week, numbers support the stereotype.

The American Psychological Association's annual Stress in America survey finds that women historically have reported higher levels of stress than men and did so again in 2011. Over the past year, on a 1-10 scale of little-to-no stress to a great deal of stress, women report stress at a level of 5.4 and men at 4.8. But the gender divide is more pronounced when it comes to dealing with the stress or even wanting to own up to it.

"I honestly think women are more **attuned** to it," says Pat Chang, 66, of Indianapolis, who was among those surveyed. "I don't think they really feel it more, but men bottle things up more and are less likely to express their real feelings."

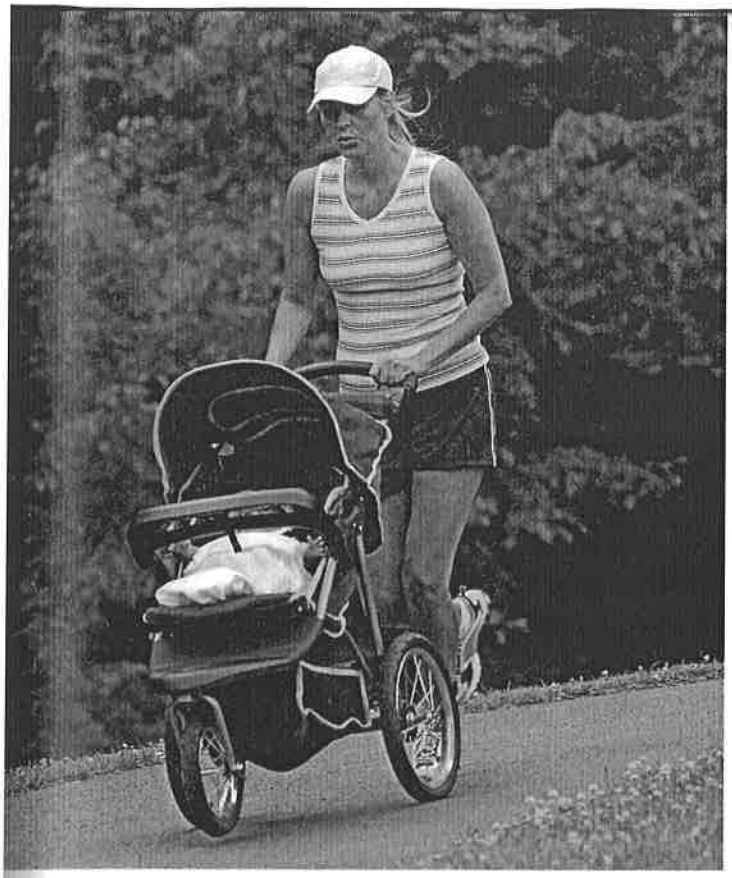
Stress happens when people **perceive** that the demands they face—work, school or relationships—exceed their ability to cope, say experts with the psychological association. At times, some stress can be beneficial because it produces a boost that can fuel the drive and energy to get through tough situations, such as exams or work deadlines.

But an extreme amount of stress can be harmful to health. In addition to the emotional toll, untreated chronic stress can result in anxiety, insomnia, muscle pain, high blood pressure and a weakened immune system. Research shows that stress can contribute to the development of major illnesses, such as heart disease, depression and obesity.

Men report being less concerned about managing stress and are more likely to say they are doing enough about it, while women think it's more important to manage stress and believe they aren't doing a good job of it, the survey finds.

"Men don't place as much value on stress management as women. They don't feel it impacts their health as much as women," says clinical psychologist Norman Anderson, the APA's chief executive officer. "Consequently, they're not doing the things to help them manage it as well."

"We know from many, many studies that social support is very, very beneficial for health, cardiovascular health and longevity," says Mara Mather, a professor of **gerontology** and psychology at the University of



Southern California in Los Angeles who studies stress and health. "It could be that under stress, women engage in strategies that are more beneficial for health than men do."

"Stressed women know it, live it and spend time trying to do something about it. Stressed men, not so much."

Anderson says women have been found to be more comfortable reporting stress. But he also says it's possible that women just have more stress in their lives. "In terms of certain societal issues—gender discrimination, sexual abuse, traumas—women experience them to a greater degree," he says. "It may be true women are experiencing more stressful events and more of the things that lead to stress."

More women than men use stress-busting strategies such as reading, exercising or being with friends and family.

Exercise is a stress reducer, says John Bartholomew, a professor of **kinesiology** and health education at the University of Texas-Austin. "The data are quite clear that almost any type of exercise will be sufficient to reduce feelings of anxiety and tension," he says. "Every form of physical activity has been demonstrated to produce a reduction in feelings of anxiety and negative moods."

What's new is that his research has found exercise also can reduce future stress. "The data suggest that people who exercise in the morning, for example, will have less of an increase in blood pressure and less of a feeling of stress if they are in a traffic jam on their way to work," Bartholomew says.

But to get what he calls an "**inoculation** effect" for later stress, the activity has to be either "high-intensity" or "long-duration," such as a hard run for 20 minutes or a 45-minute walk. That, he says, will have an effect for up to two hours.

His research also finds that "people who are dedicated exercisers exercise more under stress and those who are more infrequent exercisers exercise even less when they're experiencing stress."

Chang says she walks three times a week, does volunteer work and tries to focus on the positive. Her hobbies include photography, weaving and gardening. "I'm out in the yard even in the winter," she says.

Despite the gender differences in stress management, the survey found that both sexes report being generally satisfied with their lives and almost equal levels of life satisfaction. They also report similar concern over their financial outlook; only 45% of men and 44% of women say they're satisfied with their financial security.

Howard Hemsley, 73, who also took the survey, says he hasn't saved enough for retirement. "The reason I'm driving a cab is because I was unable to find employment after having been laid off almost three years ago."

Hemsley, a former legal word processor at a law firm, drives 12-hour shifts in Manhattan. He tries to think positively to cope with stress. "I listen to music and read," he says. "Before I started driving, I went to the gym two or three times a week, but I had to cancel the gym membership."

Despite the stress, Chang says, people just have to "keep going. Some things we can help, and some we can't."

Analyzing Primary Sources

1. ***Identifying Central Issues*** What are some possible reasons for the higher reporting of stress in women?
2. ***Identifying Cause and Effect*** Why might men experience more stress-related illnesses than women?
3. ***Analyzing*** What correlations have researchers found between stress and exercise? Explain your answer.