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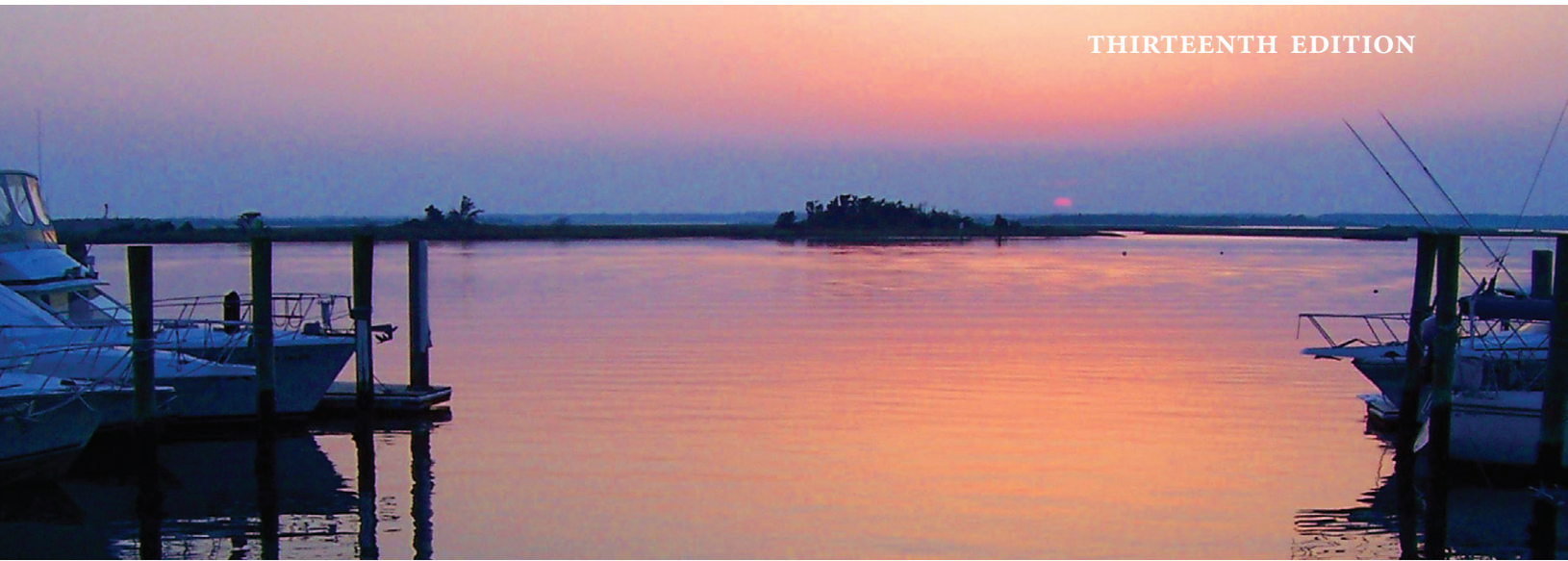
# *Comprehensive* Stress Management



Jerrold S. Greenberg

# Comprehensive Stress Management

THIRTEENTH EDITION



Jerrold S. Greenberg

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COMPREHENSIVE STRESS MANAGEMENT, THIRTEENTH EDITION

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# Preface

This book evolved out of two needs. The first pertained to the experiences of my students, colleagues, friends, and relatives who, as I listened to their stories, seemed to be crying out for help in dealing with the stress of life. Upon closer scrutiny, I realized that the only cries I was deaf to were my own. I, too, needed help managing stress.

The second need related to the nature of texts on this subject. I thought they were informative or interesting but seldom both. Furthermore, I didn't think stress management was presented as the complex subject I envision it to be. I thought books on this subject explored parts of stress management but omitted several key components. I wrote *Comprehensive Stress Management* both to address the complexity of the subject and to respond to the very human needs of college students living highly stressful lives.

This book, then, is written in a more personal, informal manner than most, and it is organized around situations in life that, when perceived as distressing, result in the emotional and physiological arousal we know as stress. There is an abundance of scientific and statistical information in this book, but there is also a healthy dose of anecdote, humor, and personal experience to bring the content to life. In addition, numerous means of self-evaluation are provided so that content takes on personal meaning for each student.

## Managing Stress in an Increasingly Stressful World

*Comprehensive Stress Management* empowers students to—

**Learn** what stress is—emotionally and physiologically—and how it affects their health.

- The science of stress is presented in three chapters covering everything from the role of the brain in stress to the effects of stress on the body.
- New or expanded topics include resiliency, optimism, humor, forgiveness, spirituality, anxiety, budgeting, safety on campus, the relationship between obesity and stress, and many more.

**Evaluate** their current level of stress and develop a stress profile that identifies their personal triggers and stressors.

- Lab Assessments in each chapter help them identify attitudes, behaviors, and coping skills and target areas for improvement.
- The Personal Stress Profile and Activity Workbook—available on the Online Learning Center for *Comprehensive Stress Management* ([www.mhhe.com/greenberg13e](http://www.mhhe.com/greenberg13e))—helps students actively create a personal plan for managing stress in their lives.

**Apply** what they learn to their own lives by using the tools and activities to become active participants in managing their own stress.

- A chapter on stress and the college student helps students identify and understand stressors unique to their current phase of life.
- Detailed descriptions of stress management and relaxation techniques offer many different approaches to explore and try, including yoga breathing techniques, meditation, progressive relaxation, imagery, behavior and anxiety management techniques, and more.
- “Getting Involved in Your Community” boxes challenge students to participate in projects designed to decrease stress levels on a broader scale.

## Content Revisions by Chapter

We all learn from experience, and I am no exception. This edition of *Comprehensive Stress Management* incorporates many changes and updates while still retaining the content and features valued by instructors and students over the previous twelve editions.

All statistics, data, and websites are updated. In addition, the most current research findings are incorporated into the text. New photos and figures have been added throughout the text. The 2020 national health objectives replace the 2010 national health objectives in several chapters.

**Chapter 1:** A new Lab Assessment is added entitled “What Causes You Stress?” The purpose of this lab is to encourage readers to appreciate the personal nature of the information and skills to follow.

**Chapter 3:** New boxed material is added entitled “Characteristics of Cardiac Muscle”; the discussion of posttraumatic stress disorder is expanded; and a new Lab Assessment is added entitled “How Are My Health Indices?”

**Chapter 4:** The chapter entitled “Stress and the College Student” is moved from Chapter 16 in the previous edition of *Comprehensive Stress Management*. The reason for this change is to have readers consider earlier in the text how stress affects college students, and what college students can do to better manage stress.

Two new boxes are added. One is entitled “College Students and Credit Card Statistics” and the other is “The Credit Card Accountability, Responsibility, and Disclosure (CARD) Act of 2009”; recommendations are added to assist college students to better manage credit cards and limit debt; and a section on eating disorders is added that discusses anorexia nervosa and bulimia.

**Chapter 6:** MyPlate information is included. New boxed material entitled “How to Create a Healthy Diet” has been added. The section entitled “The Heavy Toll of Diet-Related Chronic Diseases” (cardiovascular disease, hypertension, diabetes, cancer, and osteoporosis) has been included.

**Chapter 7:** Expanded communication coverage has been included. A new section on emotional intelligence is added; a new box entitled “Ways to Improve Emotional Intelligence” provides advice for students who want to become more emotionally intelligent; and a new Lab Assessment is added entitled “How Emotionally Intelligent Are You?”

**Chapter 9:** A new section entitled “Spirituality and College Students” is added. Updated stress-related national health objectives have been included.

**Chapter 12:** Body scan relaxation exercises are new to this edition. Repetitive prayer for relaxation information has been expanded.

**Chapter 13:** 2020 National Health Objectives Related to Physical Fitness has been updated. The presentation of stretching is expanded to include dynamic and

ballistic stretching; and exercise guidelines from the American College of Sports Medicine are added. A new table entitled “Adding Physical Activity to Your Life” has been added.

**Chapter 14:** A new Lab Assessment is added entitled “Can You Use Behavior Change Theory to Change Your Behavior?”

**Chapter 15:** Two new boxes are added pertaining to mixed race and international college students. One is entitled “How Colleges Can Help Mixed Race Students with Identity Stress,” and the other is entitled “Stress and the International Student.” The 2020 National Health Objectives relative to gender, race and ethnicity, disability, and sexual orientation have been added, and the discussion of health disparities has been expanded.


**Chapter 16:** Two new boxes are added. One is entitled “Benefits of Job Stress Management Programs.” The other is entitled “Some Facts About Women and Retirement.” The chapter has increased coverage of gender and occupational stress.

**Chapter 18:** “Stress and the Elderly,” from previous editions of *Comprehensive Stress Management*, is deleted. Instructor feedback was that the semester did not allow time to consider this material. Therefore, rather than include content that would not be used and thereby increase the cost of the book for the student, this content is deleted. This content can be found on the book’s website.

## Resources for Instructors

The *Personal Stress Profile and Activity Workbook* is available as an accompaniment to *Comprehensive Stress Management*. The workbook includes numerous other scales to help students learn more about the stressors in their lives and how they can best manage them. How to make the best use of *The Personal Stress Profile and Activity Workbook* is described on page 14.

The Online Learning Center for *Comprehensive Stress Management* ([www.mhhe.com/greenberg13e](http://www.mhhe.com/greenberg13e)) offers instructors many resources, including a Course Integrator Guide, a Test Bank, and PowerPoint slides.

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*This edition is dedicated to Jonah, Zoe, and Garrett—my three grandchildren. When I am with them all stress evaporates away. I wish them that feeling throughout their lives, although I know that to be unrealistic. So, when they experience stress, I hope they are successful employing the numerous stress management techniques learned from reading their grandpa's book and, as a result, achieve lives of satisfaction and fulfillment.*

—Jerrold S. Greenberg





*part 1*

A photograph of two rowers in a boat on a calm sea at sunset. The rowers are silhouetted against the bright, low sun on the horizon. The water is a deep blue, and the sky is a lighter blue. The rowers are positioned in the center of the frame, with their oars extending outwards. The overall mood is serene and peaceful.

*Scientific Foundations*



# 1

## What Is Stress?

It was a pleasant spring day—about 70 degrees, with the sun shining and a slight breeze. It was the kind of day I would have enjoyed celebrating by playing tennis, jogging, and helping my son learn how to ride his bicycle (an aggravating but necessary task). Instead, I was on the shoulder of a country road in upstate New York with my hands on my knees, vomiting. The story of how I wound up on such a glorious day in such an inglorious position serves as an important lesson.

At the time, I was an assistant professor, imposing my know-it-all attitude upon unsuspecting and innocent college students at the State University of New York at Buffalo. I had become quite successful in each of the three areas the university established as criteria for promotion and tenure: teaching, research and other publications, and university and community service. The student evaluations of my classes were quite flattering. I had published approximately 15 articles in professional journals and was contracted to write my first book. So much for teaching and the proverbial “publish or perish” syndrome. It is on the community-service criteria that I need to elaborate.

To meet the community-service standards of acceptance for promotion and tenure, I made myself available as a guest speaker to community groups. I soon found that I was able to motivate groups of people through speeches and workshops on numerous topics, both directly and tangentially related to my area of expertise—health education. I spoke to the local Kiwanis Club on the topic “Drug Education Techniques” and to the Green Acres Cooperative Nursery School’s parents and teachers on “Drug Education for Young Children.” I was asked to present the senior class speech at Medaille College on “Sex Education” and wound up conducting workshops for local public school districts on such concerns as “Why Health Education?” “Values and Teaching,” “Group Process,” and “Peer Training Programs for Cigarette-Smoking Education.” Things started to take shape, and I expanded my local presentations to state and national workshops and to presenting papers at various state and national meetings.

My life changed rapidly and repeatedly. I went to Buffalo as an assistant professor and was promoted twice, leaving as a full professor with tenure and administrative responsibility for the graduate program in health education. When I left Buffalo, I had published more than 40 articles in professional journals, and my second book was soon to come off the presses. During my tenure at SUNY/Buffalo, I appeared on radio and television programs and was the subject of numerous newspaper articles. In Buffalo I bought my first house, fathered my two children, and won my first tennis tournament. In short, I became a success.

So why the vomiting? I was experiencing too much change in too short a period of time. I wondered if I was as good as others thought I was or if I was just lucky. I worried about embarrassing myself in front of other people and became extremely anxious when due to speak in front of a large group—so anxious that on a nice spring day, about 70 degrees, with the sun shining and a slight breeze, as I was on my way to address a group of teachers, school administrators, and parents in Wheatfield, New York, I became sick to my stomach. I pulled the car off the road,

jumped out, vomited, jumped back in, proceeded to Wheatfield, and presented a one-hour speech that is long since forgotten by everyone who was there.

What I didn't know then, but know now, is that I was experiencing stress—too much stress. I also didn't know what to do. Everything seemed to be going very well; there seemed to be no reason to become anxious or ill. I think I understand it all now and want to explain it to you. I want to help you learn about stress and how to manage it so that your life will be better and you will be healthier.

## What Can You Get Out of This Book and This Course?

What if you were told you could buy a drink and feel less stressful when you have an exam in class, or are at a social gathering, or when going to the doctor or dentist? What if this drink also helped you better manage the stress you feel when having to speak in front of a group of people, or when meeting with your professor? How much would you pay for such a drink? Well, unfortunately, there is no such beverage. However, the same benefits can be gained in another way. That is, if you learn, practice, and employ stress management techniques, you can achieve all the benefits above. This book and the stress management course in which you are enrolled will help you become less stressful and, as a result, be healthier and live a more fulfilling, satisfying life. Now how can you beat that? So, let's get started. First we consider how this whole field of stress management developed and how it has achieved credibility.

## The Pioneers

I don't know about you, but I found that the history courses I was required to take as an undergraduate were not as interesting as they might have been. On the other hand, the information included in those classes was important to learn—not for the facts per se, but for the general concepts. For example, although I long ago forgot the specific economic factors preceding the World Wars, I have remembered that wars are often the result of economic realities and not just conflicts of ideology. That is an important concept that I would not have appreciated had I not enrolled in History 101.

This wordy introduction to the history of stress management somewhat assuages my conscience but won't help you much unless I make this discussion interesting. Accepting this challenge, and with apologies for my failures to meet it, let's wander through the past and meet some of the pioneers in the field of stress (see Table 1.1).

The first person we meet is Walter Cannon. In the early part of the twentieth century, Cannon was a noted physiologist employed at the Harvard Medical School. It was he who first described the body's reaction to stress.<sup>1</sup> Picture this: You're walking down a dark alley at night, all alone, and you forgot your glasses. Halfway through the alley (at the point of no return) you spot a big, burly figure carrying a club and straddling your path. Other than thinking "Woe is me," what else happens within you? Your heart begins to pound and speed up, you seem unable to catch your breath, you begin to perspire, your muscles tense, and a whole array of changes occur within your body. Cannon was the researcher who first identified this stress reaction as the **fight-or-flight response**. Your body prepares itself, when confronted by a threat, to either stand ground and fight or run away. In the alley, that response is invaluable because you want to be able to mobilize yourself quickly for some kind of action. We'll soon see, though, that in today's society the fight-or-flight response has become a threat itself—a threat to your health.

Curious about the fight-or-flight response, a young endocrinologist studied it in detail. Using rats and exposing them to **stressors**—factors with the potential to cause stress—Hans Selye was able to specify the changes in the body's physiology.

### fight-or-flight response

The body's stress reaction that includes an increase in heart rate, respiration, blood pressure, and serum cholesterol.

### stressor

Something with the potential to cause a stress reaction.

**Table 1.1**  
**Pioneers in Stress and**  
**Stress Management**

Pioneer	Date	Area of Study/Influence
Oskar Vogt	1900	Hypnosis
Walter Cannon	1932	The fight-or-flight response
Edmund Jacobson	1938	Progressive relaxation
Johannes Schultz	1953	Autogenic training
Stewart Wolf/Harold Wolff	1953	Stress and headaches
George Engel	1955	Stress and ulcerative colitis
Hans Selye	1956	The physiological responses to stress
A. T. W. Simeons	1961	Psychosomatic disease
Stewart Wolf	1965	Stress and the digestive system
Wolfgang Luthe	1965	Autogenic training
Lawrence LeShan	1966	Stress and cancer
Richard Lazarus	1966	Stress and coping/hassles
Thomas Holmes/Richard Rahe	1967	Stress/life change/illness
Robert Keith Wallace	1970	Transcendental meditation
Thomas Budzynski	1970	Stress and headaches
Meyer Friedman/Ray Rosenman	1974	Type A behavior pattern
Carl Simonton	1975	Stress and cancer
Robert Ader	1975	Psychoneuroimmunology
Herbert Benson	1975	The relaxation response/meditation
Daniel Goleman	1976	Meditation
Gary Schwartz	1976	Meditation/biofeedback
Robert Karasek	1979	Job Demand-Control Model
Suzanne Kobasa	1979	Hardiness
Anita DeLongis	1982	Hassles and illness
Dean Ornish	1990	Stress/Nutrition/Coronary Heart Disease
Jon Kabat-Zinn	1992	Meditation and Stress Reduction
Christina Maslach	1993	Burnout
J.K. Kiecolt-Glaser	1999	Psychoneuroimmunology
Shelly Taylor	2000	Tend and Befriend/Women's Coping Style
Patch Adams	2002	Humor and Stress and Health
Johan Denollet	2005	Type D Personality
E. L. Worthington	2005	Forgiveness and Health

Selye concluded that, regardless of the source of the stress, the body reacted in the same manner. His rats developed a “substantial enlargement of the cortex of the adrenal glands; shrinkage or atrophy of the thymus, spleen, lymph nodes, and other lymphatic structures; an almost total disappearance of eosinophil cells (a kind of white blood cell); and bleeding ulcers in the lining of the stomach and duodenum.”<sup>2</sup> His research was first published in his classic book *The Stress of Life*.<sup>3</sup> Selye summarized stress reactivity as a three-phase process termed the **general adaptation syndrome** (see Figure 1.1):

*Phase 1: Alarm reaction.* The body shows the changes characteristic of the first exposure to a stressor. At the same time, its resistance is diminished and, if the stressor is sufficiently strong (severe burns, extremes of temperature), death may result.

**general adaptation syndrome**

The three stages of stress reaction described by Hans Selye.



**1. Alarm Phase**  
For example, being at a party but having social anxiety.



**2. Resistance Phase**  
For example, when others try to involve the socially anxious party guest, he experiences stress (perspiration, muscle tension, increased heart rate, etc.).



**3. Exhaustion Phase**  
For example, if the social anxiety is experienced often, and over a long period of time, it can result in illness and disease such as coronary heart disease

## Figure 1.1

The General Adaptation Syndrome in Action

*Phase 2: Stage of resistance.* Resistance ensues if continued exposure to the stressor is compatible with adaptation. The bodily signs characteristic of the alarm reaction have virtually disappeared, and resistance rises above normal.

*Phase 3: Stage of exhaustion.* Following long-continued exposure to the same stressor, to which the body has become adjusted, eventually adaptation energy is exhausted. The signs of the alarm reaction reappear, but now they are irreversible, and the individual dies.

Hans Selye defined stress as “the nonspecific response of the body to any demand made upon it.”<sup>4</sup> That means good things (e.g., a job promotion) to which we must adapt (termed **eustress**) and bad things (e.g., the death of a loved one) to which we must adapt (termed **distress**); both are experienced the same physiologically.

Selye was really onto something. His research proved so interesting and important that he drew a large number of followers. One of these was A. T. W. Simeons, who related evolution to psychosomatic disease in his classic work, *Man's Presumptuous Brain*.<sup>5</sup> Simeons argued that the human brain (the diencephalon, in particular) had failed to develop at the pace needed to respond to symbolic stressors of twentieth-century life. For example, when our self-esteem is threatened, Simeons stated, the brain prepares the body with the fight-or-flight response. If the threat to self-esteem stems from fear of embarrassment during public speaking, neither fighting nor running away is an appropriate reaction. Consequently, the body has prepared itself physiologically to do something our psychology prohibits. The unused stress products break down the body, and psychosomatic disease may result.

Other researchers have added to the work of Cannon, Selye, Simeons, and others to shed more light on the relationship of stress to body processes. With this understanding has come a better appreciation of which illnesses and diseases are

### eustress

Good things to which one has to adapt and that can lead to a stress reaction.

### distress

Bad things to which one has to adapt and that can lead to a stress reaction.

associated with stress and how to prevent these conditions from developing. For example, Dr. Harold Wolff became curious why only 1 in 100 prisoners of war held by the Germans during World War II died before their release, while 33 in 100 held in Japanese camps died before their release. Keeping nutrition and length of time held captive constant, Wolff found that emotional stress, much greater in Japanese prisoner-of-war camps than in German ones, was the cause of much of this difference.<sup>6</sup>

Others also helped clarify the effects of stress: Stewart Wolf demonstrated its effects on digestive function;<sup>7</sup> Lawrence LeShan studied its effects on the development of cancer;<sup>8</sup> George Engel studied stress and ulcerative colitis;<sup>9</sup> Meyer Friedman and Ray Rosenman and more recent researchers<sup>10-17</sup> identified the relationship between stress and coronary heart disease; and Wolf and Wolff studied stress and headaches.<sup>18</sup>

Others have found ways of successfully treating people with stress-related illnesses. For example, Carl Simonton, believing personality to be related to cancer, has added a component to the standard cancer therapy: It consists of visualizing the beneficial effects of the therapy upon the malignancy.<sup>19</sup> For some headache sufferers, Thomas Budzynski has successfully employed biofeedback for relief.<sup>20</sup> Herbert Benson, a cardiologist, first became interested in stress when he studied transcendental meditation (TM) with Robert Keith Wallace.<sup>21</sup> Benson then developed a relaxation technique similar to TM and has used it effectively to treat people with high blood pressure.<sup>22-25</sup>

Relaxation techniques have also been studied in some detail. In addition to Benson's **relaxation response** (see p. 243), some of the more noteworthy methods include **autogenic training** (see p. 253) and **progressive relaxation** (see p. 262). Around 1900, a physiologist, Oskar Vogt, noted that people were capable of hypnotizing themselves. A German psychiatrist, Johannes Schultz, combined this knowledge with specific exercises to bring about heaviness and warmth in the limbs—that is, a state of relaxation.<sup>26</sup> This autohypnotic relaxation method became known as autogenic training and was developed and studied further by Schultz's student Wolfgang Luthe.<sup>27</sup>

Another effective and well-studied relaxation technique involves the tensing and relaxing of muscles so as to recognize muscle tension and bring about muscular relaxation when desired. This technique, progressive relaxation, was developed by Dr. Edmund Jacobson when he noticed his bedridden patients were still muscularly tense in spite of their restful appearance.<sup>28</sup> Their muscular tenseness (**bracing**), Jacobson reasoned, was a function of nerve impulses sent to the muscles, and it was interfering with their recovery. Progressive relaxation (see p. 262), sometimes termed **neuromuscular relaxation**, involves a structured set of exercises that trains people to eliminate unnecessary muscular tension.

Although Benson's relaxation response, a form of meditation, became popular in the 1970s, meditation has been around for a long time. In fact, records of meditation date back 2,000 years. Indian yogis and Zen monks were the first meditators to be scientifically studied. The results of these studies demonstrated the slowing-down effect (hypometabolic state) of meditation upon many body processes: heart rate, breathing, and muscle tension, to name but a few. For example, Therese Brosse reported Indian yogis able to control their heart rates;<sup>29</sup> Anand and colleagues showed changes in brain waves during meditation;<sup>30</sup> Kasamatsu and Hirai confirmed and expounded upon Anand's findings;<sup>31</sup> and Goleman and Schwartz found meditators more psychologically stable than nonmeditators.<sup>32</sup>

Later, a whole area of study regarding life changes to which we must adapt and their effect upon health has emerged. Thomas Holmes and Richard Rahe showed that, the more significant the changes in one's life, the greater the chance of the onset of illness.<sup>33</sup> Based on these conclusions, researchers are working toward a

#### **relaxation response**

A series of bodily changes that are the opposite of the stress reaction.

#### **autogenic training**

A relaxation technique that involves a sensation of heaviness, warmth, and tingling in the limbs.

#### **progressive relaxation**

A relaxation technique that involves contracting and relaxing muscle groups throughout the body.

#### **bracing**

The contraction of muscles for no obvious purpose.

#### **neuromuscular relaxation**

Another term for progressive relaxation.

better understanding of this relationship. For example, Lazarus,<sup>34</sup> DeLongis,<sup>35</sup> and their colleagues have found that everyday hassles (see page 140) are even more detrimental to one's health than major life changes.

More recently, researchers have studied the effects of stress on the immunological system. As a result, a whole new field of research has developed called *psychoneuroimmunology*. Robert Ader,<sup>36</sup> J. K. Kiecolt-Glaser,<sup>37</sup> Candice Pert<sup>38</sup> and others found that stress diminished the effectiveness of the immune system thereby subjecting one to a range of illnesses and diseases. In addition, Shelly Taylor's research<sup>39</sup> identified differences in stress coping techniques used by males and females. Taylor found that females are more likely to use social connections to cope with stressful events than are males. Other current researchers have described a Type D personality (depressed, anxious, irritable). Johan Denollet's research<sup>40</sup> demonstrated that Type D is related to coronary heart disease. In addition, E. L. Worthington<sup>41</sup> showed that forgiveness can be a non-stressful, healthy behavior.

This brief overview, is painted with a broad brush. Subsequent chapters refer to these pioneers and their work, providing you with an even better understanding of the significance of managing stress and tension. When we discuss stress-related illnesses and diseases, for example, you will once again read about Friedman and Rosenman, Simonton, Wolff, and others. When we discuss life-situation stressors, reference will be made to Lazarus and to Holmes and Rahe. When we discuss relaxation techniques, we will elaborate upon the work of Benson, Schultz, Luthe, Jacobson, and others.

For now, I hope you come away from this brief history of the stress field understanding that stress may be not just bothersome but downright unhealthy, and that stress may lead to other negative consequences such as poor relationships with loved ones or low academic achievement. There are, however, means of lessening these unhealthy and negative effects. Stress management is serious business to which some very fine minds have devoted their time and effort. As you'll find out in this book, this study has paid off and is continuing to do so.



## Muscle Tension

As you begin to read this, FREEZE. Don't move a bit! Now pay attention to your body sensations and position.

Can you drop your shoulders? If so, your muscles were unnecessarily raising them.

Are your forearm muscles able to relax more? If so, you were unnecessarily tensing them.

Is your body seated in a position in which you appear ready to do something active? If so, your muscles are probably unnecessarily contracted.

Can your forehead relax more? If so, you were tensing those muscles for no useful purpose. Check your stomach, buttocks, thigh, and calf muscles. Are they, too, contracted more than is needed?

Unnecessary muscular contraction is called *bracing*. Many of us are guilty of bracing and suffer tension headaches, neck aches, or bad backs as a result.

Take a moment for yourself now. Place this book aside, and concentrate on just letting as many of your muscles relax as possible. Notice how that feels.

When we discuss deep muscle relaxation, and progressive relaxation in particular, you'll learn skills enabling you to bring about this sensation more readily.

# Stress Theory

Now let's get down to business. What causes stress? There are several different theories about what causes stress and its effects on illness and disease.

## Life-Events Theory

One theory developed by Holmes and Rahe<sup>42</sup> proposes that stress occurs when a situation requires more resources than are available. For example, if you are taking a test for which you are unprepared, you might experience stress. To measure this type of stress, some researchers have compiled lists of major stressful life events such as the death of a loved one. The rationale is that the more of these events a person experiences, the greater is his or her stress.

DeLongis and her colleagues<sup>43</sup> are supporters of this general approach, but they consider routine stressful life events more significant than major ones that happen infrequently. They argue that daily *hassles*, though appearing less important by themselves, add up and therefore are more stressful than major events. Furthermore, when computing the formula for stress, they consider daily *uplifts*, such as someone saying something nice about you, as counteracting some hassles.

Another theory of how life events affect health is **allostatic load**, first defined by McEwen.<sup>44,45</sup> Allostatic load is based on the hypothesis that there is a cumulative physiological risk associated with exposure to psychosocial stressors over one's life. There is ample evidence for this view.<sup>46–48</sup> Allostatic load proposes that a key mediator of increasing risk for disease is the dysregulation of systems designed to balance the organism's responses to environmental demands. Exposure to stress elicits adaptive physiological responses in regulatory systems, including the sympathetic and parasympathetic nervous systems and the cardiovascular and immune systems. Allostasis (related to homeostasis) is the adaptive maintenance of vitality in these systems in response to changing environmental circumstances. Allostatic load refers to the cumulative biological wear and tear that can result from excessive cycles of response in these systems as they seek to maintain allostasis in the face of environmental challenge. According to the theory, as these systems become taxed and dysregulated, they begin to exhibit imbalances in the primary mediators of the stress response, such as glucocorticoids, catecholamines, and proinflammatory cytokines. Chronic dysregulation is believed to confer cumulative physiological risk for disease and disability by causing damage to tissues and major organ systems.<sup>49</sup>

### allostatic load

The cumulative biological wear and tear that results from responses to stress that seek to maintain body equilibrium.

## Hardiness Theory

Other researchers conceive of stress somewhat differently. They focus not on how many stressful events you experience but on your attitude toward those events. For example, Kobasa and her colleagues<sup>50</sup> argue that if you perceive potentially stressful events as a *challenge* instead of as a *threat*, less stress will result. This buffering effect—buffering between stress and the development of illness and disease—is termed *hardiness* and is discussed in detail in Chapter 8.

## Social Support Theory

Still other stress experts<sup>51</sup> envision stress occurring when there is not enough social support available to respond to the event effectively. Social support may take many forms. For example, it could be emotional support to help you feel better about yourself or about the event as you cope with it, or it could take the form of financial assistance. In any case, social support helps you cope with the event and therefore decreases your level of stress. Social support is discussed in detail in Chapters 7 and 9.

There are many other ways to conceptualize stress and its effects. Each, though, consists of at least two components: a stressor and stress reactivity.

## The Stressor

A stressor is a stimulus with the *potential* for triggering the fight-or-flight response. The stressors for which our bodies were evolutionarily trained were threats to our safety. The caveman who saw a lion looking for its next meal needed to react quickly. Cavemen who were not fast enough or strong enough to respond to this threat didn't have to worry about the next threat. They became meals for the lions. The fight-or-flight response was necessary, and its rapidity was vital for survival.

Modern men and women also find comfort and safety in the fight-or-flight response. We periodically read of some superhuman feat of strength in response to a stressor, such as a person lifting a heavy car off another person pinned under it. We attribute this strength to an increase in adrenaline, and it is true that adrenaline secretion does increase as part of the fight-or-flight response. However, there are less dramatic examples of the use the fight-or-flight response has for us. When you step off a curb not noticing an automobile coming down the street, and you hear the auto's horn, you quickly jump back onto the curb. Your heart beats fast, your breathing changes, and you perspire. These are all manifestations of your response to a stressor, the threat of being hit by a car. They indicate that your body has been prepared to do something active and to do it immediately (jump back onto the curb).

So far, these examples of stressors have all required immediate action to prevent physical harm. Other stressors you encounter have the potential for eliciting this same fight-or-flight response, even though it would be inappropriate to respond immediately or with some action. These stressors are symbolic ones—for example, loss of status, threats to self-esteem, work overload, or overcrowding. When the boss overloads you with work, it is dysfunctional to fight with him or her and equally ridiculous to run away and not tackle the work. When you encounter the stressors associated with moving to a new town, either fighting with new people you meet or shying away from meeting new people is an inappropriate means of adjustment.



Stressors come in many forms.