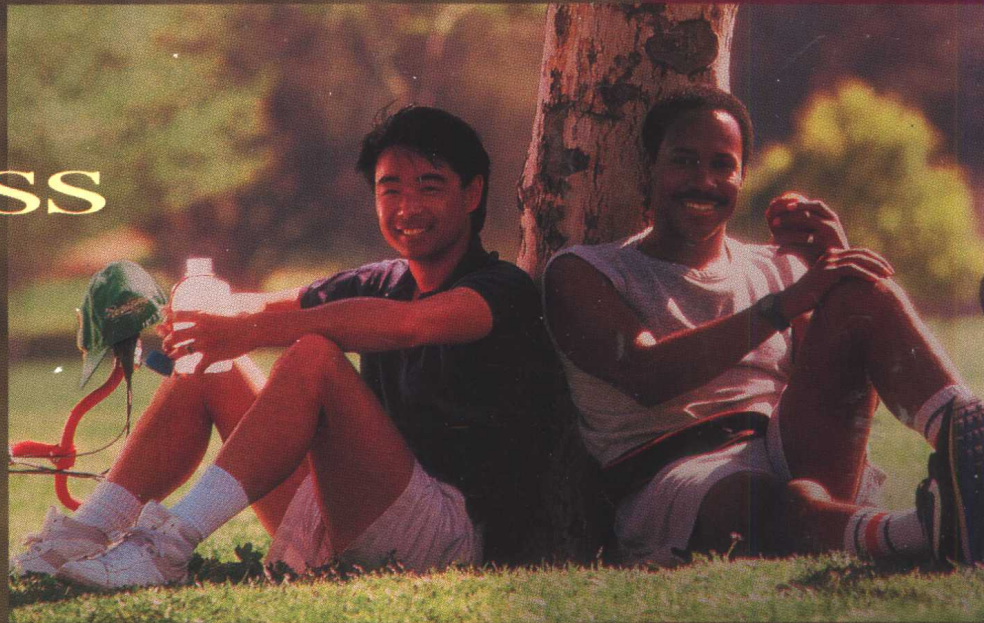


Third Edition

# LIFETIME

## Fitness *and.* Wellness



*A  
Personal  
Choice*

MELVIN H. WILLIAMS



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MELVIN H. WILLIAMS

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Library of Congress Catalog Card Number: 91-78101

ISBN 0-697-12670-6

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Printed in the United States of America by Wm. C. Brown Communications, Inc.,  
2460 Kerper Boulevard, Dubuque, IA 52001

10 9 8 7 6 5 4 3

# Preface

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**H**appiness! We all want it and tend to seek it in a variety of ways. However, Bertrand Russell, the venerable philosopher, noted that man is an animal whose happiness depends on his physiology more than he likes to think. Unfortunately, many Americans have abused their own natural physiology, the wonderful functioning of the human body that gives us life, so much that the quality of life, or happiness, as well as the quantity of life, or longevity, may be significantly diminished.

Fortunately, the United States is in the midst of a health and fitness boom that has endured for over a decade and continues to grow, with millions of Americans changing their lifestyles by initiating exercise programs, shifting to a more natural healthful diet, maintaining an ideal body weight, breaking the smoking habit, decreasing alcohol consumption, recognizing the importance of safe sex practices, and using various stress-reduction techniques, all in order to look and feel better. This movement is a positive one, for these life-style changes may provide us with the immediate health benefits we desire now, and may also help us prevent many of the degenerative diseases that plague our modern society and decrease the quality and quantity of life in later years. Collectively, these healthful changes characterize a Positive Health Life-style.

The health and fitness boom originated among individuals in their thirties and forties; however, increasing numbers of college-aged students have adopted changes characteristic of a Positive Health Life-style after being exposed to these concepts in college courses with titles similar to "Personal Wellness" or "Health through Exercise." This textbook is designed to be used in conjunction with such courses, but the presentation of the material is also suitable for students to use on an individual basis. It provides contemporary information concerning the beneficial effects of a Positive Health Life-style and how to implement and live such a life-style. With proper knowledge and guidance, the student can design and implement his or her own Positive Health Life-style, one that can last a lifetime. This effort is facilitated by the presence on the campuses of many colleges and universities of Wellness Centers.

This book is organized into twelve chapters. Key concepts and key terms are highlighted at the beginning of each chapter; numerous figures and tables are included to help explain the major concepts. Contemporary research findings that support the chapter content are documented at the end of each chapter, grouped as books that provide broad overviews, reviews that synthesize and interpret current research, and specific studies that focus on a particular topic of interest.

Chapter 1 establishes the basis for adopting a Positive Health Life-style. Chapter 2 presents an overview of human energy systems and basic principles of designing and implementing an individualized exercise program and other life-style changes.

The heart of the textbook, chapters 3 through 9, offers specific guidelines for adopting a Positive Health Life-style. Chapter 3 covers aerobic exercise programs; chapter 4 focuses upon resistance-training programs for muscular strength and endurance; chapter 5 deals with the development of flexibility; chapter 6 provides the basis for healthy nutrition; chapter 7 integrates the roles of diet, exercise, and behavior modification in weight control; chapter 8 explores stress reduction techniques; and chapter 9 discusses the potential health consequences associated with various high-risk behaviors, such as substance abuse (particularly cigarette smoking and alcohol intake) and unsafe sex practices.

Chapter 10 covers several health issues of particular interest to females, while chapter 11 stresses a Positive Health Life-style as a lifelong program contributing to healthful aging. This chapter emphasizes the impact of a Positive Health Life-style upon a number of major degenerative diseases in our society today, such as cardiovascular diseases, metabolic disorders, and musculoskeletal problems. Finally, chapter 12 provides a brief discussion of adherence, or maximizing the ability to stay with the Positive Health Life-style for a lifetime.

Other features include Laboratory Inventories, which help assess an individual's current health life-style and provide guidelines for modifications; a glossary of terms; and eight appendices—the Recommended Dietary Allowances; the Food

Exchange Lists of the American Dietetic Association and the American Diabetes Association; a position statement on weight control by the American College of Sports Medicine (ACSM); scoring charts for Dr. Kenneth Cooper's aerobic fitness tests; caloric expenditure for a wide variety of physical activities; calories, fat, and cholesterol in products sold in common fast-food restaurants; energy expenditure in METS for a variety of daily activities; and the ACSM position stand on the recommended quantity and quality of exercise for developing and maintaining cardiorespiratory and muscular fitness in healthy adults.

This text asks the individual to think about the possible consequences of his or her current life-style, not only for now but for the future. More importantly, it provides a mechanism for change by actively involving the student in a number of laboratory inventories designed to help implement a Positive Health Life-style.

I would like to acknowledge Mr. Ed Jaffe, editor for Wm. C. Brown Publishers, who encouraged me to write this textbook. I would also like to thank my current editors, Scott

Spoolman and Chris Rogers, and my production editor, Marlys Nekola, for their invaluable assistance throughout the various stages of development.

The contributions reviewers made to the development of this text are gratefully acknowledged. They have made many useful recommendations relative to its reorganization and content. The reviewers were Joel V. Brothers (North Carolina State University), John Cheffers (Boston University), Charles R. Darracott (University of Georgia), Nancy Feagans Smith (St. Petersburg Junior College), Susan L. Herman (Slippery Rock University), John McIntosh (Shoals Community College), Beverly F. Mitchell (Kennesaw State College), Charles E. Raynor (North Carolina State University), Davis Roberts (CUNY-Lehman College), Gayle Runke (Southwest Missouri State University), and Nancy Stubbs (Wichita State University).

*Melvin H. Williams*  
*Virginia Beach, Va.*

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## 1

**A POSITIVE HEALTH LIFE-STYLE****Key Terms**

behavior modification  
chronic diseases  
chronological age  
disuse phenomena

epidemiological research  
experimental research  
functional age  
health promotion practices

health protection services  
health risk appraisal (HRA)  
personal choice  
Positive Health Life-style

preventive services  
prudent health behavior  
risk factor

**Key Concepts**

- Of the three major classes of health objectives developed for the nation by the Public Health Service, health promotion practices are primarily under the control of the individual.
- Chronological aging is inevitable, and although the catabolic effects usually associated with the chronological aging process also appear to be inevitable, you may maintain a younger functional age by following a Positive Health Life-style.
- Four major components of a Positive Health Life-style are a properly planned exercise program, a balanced nutrition program, appropriate methods to enhance mental health, and the avoidance of substance abuse.
- Personal health promotion and preventive medicine encourage personal choices of positive health behaviors that will help counteract key risk factors. Self-responsibility is a key to personal health promotion.
- Key risk factors associated with the onset of chronic diseases include physical inactivity; excess body weight; a diet high in fat, cholesterol, and salt; high blood pressure; excessive stress; smoking habits; and excessive alcohol intake.
- Health risk appraisals, educational tools designed to analyze your current health life-style, offer a general idea of areas in your life that may pose a health risk.
- A Positive Health Life-style is not solely concerned with the prevention of chronic diseases; it is also concerned with helping you achieve the healthiest body and mind possible, within natural limitations.
- Although the development of a Positive Health Life-style should be encouraged as early in life as possible, the benefits of adopting such a life-style may be achieved at almost any age.
- A Positive Health Life-style helps you meet the short-term goals of looking better physically and feeling better mentally, and also helps you to meet long-range goals of preventing the onset of chronic diseases.



## INTRODUCTION

College and university student populations are becoming increasingly diverse, particularly in relation to age. It is not uncommon for a typical college-aged student (one aged eighteen to twenty-four) to take courses, even fitness and wellness courses, along with students in their thirties, forties, and beyond. If you are a young college student, most of your concerns about the quality of your physical and mental health are probably grounded in the present. Basically, you want to look good physically and feel good mentally—*now*. You probably do not spend a great deal of time worrying about the distant future, such as whether or not you will develop heart disease, cancer, or diabetes, how you will take care of yourself during your retirement years, or how long you are going to live. However, such thoughts may have crossed your mind at one time or another. On the other hand, if you are older than the typical college-aged student, these thoughts may have become increasingly important to you.

Regardless of your age, you can make a number of changes in your current life-style that will probably help you to look better physically and to feel better mentally in a relatively short time. Interestingly, these rather simple life-style changes that center around fitness and wellness may not only improve the quality of your life in the present, they will help enhance the quality of life over time and improve longevity. Although genetics plays an important role in your future health, we know more about health promotion and preventive medicine today than our parents and grandparents did in the past, so we may be able to prevent some of the health problems that they experienced. Genetics is an important factor relative to your health, but so too is how you deal with your personal environment. Nature deals you a set of cards, but you play them.

*Fitness and wellness* are two key buzzwords of the 1990s. Just look around. We have best-selling books focusing on nutrition and exercise, popular magazines called *American Health* and *Eating Well*, separate sections in our daily newspapers covering health and fitness, television channels devoted almost exclusively to medicine and health, videotapes by movie stars and television celebrities on how to become physically fit at home, and the increased use of health and fitness to advertise products ranging from breakfast cereals to beer.

In the United States, the current emphasis on fitness and wellness was cultivated in the 1960s, sprouted in the 1970s, blossomed in the 1980s, and appears to be headed for fruition in the 1990s. This trend has been affected by a variety of factors, including the influence of a youthful and fit president, John F. Kennedy, in the early 1960s; the running boom of the 1970s; and the increasing involvement of both private business corporations and public governmental agencies in disease prevention and health promotion during the 1980s and 1990s.

In 1991 the Public Health Service (PHS) of the United States Department of Health and Human Services released a document entitled *Healthy People 2000: National Health Promotion and Disease Prevention Objectives*. This document outlines a national strategy for significantly improving the health of the nation. More than three hundred specific health

objectives fall into three major categories: health protection, preventive services, and health promotion. There are also several subclassifications for each major category.

**Health protection services** are those related to environmental or regulatory measures that confer protection on large segments of the population, such as water fluoridation for prevention of tooth decay and legislation requiring seat belt use. Others generally perform these services to protect our health.

**Preventive services** include screening, counseling, or other services provided in a clinical setting. Included in this category are screening programs for the detection of high blood pressure and immunization to prevent the development or spread of certain diseases. Again, others usually provide these services for our health benefit.

**Health promotion practices** focus upon eight major areas, five of which are most relevant to this text: physical fitness and exercise, nutrition, mental health, smoking and health, and misuse of alcohol and drugs. In contrast to health protection services and preventive services, health promotion practices involve life-style factors basically under the control of the individual. Moreover, health protection and preventive services will not succeed unless personal health promotion practices are observed. For example, legislation will be ineffective if you do not wear your seat belt every time you drive, as will an education program to prevent the development of cancer if you do not practice certain recommendations, such as regular breast or testicular self-examination.

Although many of the health objectives are designed to address immediate health problems, such as avoidance of unintentional injuries, much of the emphasis behind recent governmental support for health promotion and preventive medicine programs is the reduction of the magnitude of future health care costs associated with the "graying of America." For example, individuals born during the baby boom era of the late 1940s, now in their late thirties and early forties, will soon be in their sixties, the time of life when serious health problems begin to become magnified.

**Chronic diseases**, such as coronary heart disease, cancer, diabetes, and osteoporosis, generally occur with advancing age, particularly if individuals had unhealthy life-styles during earlier adulthood. Thus, from a financial point of view, it is important for the government to keep people healthy for as long as possible.

On the other hand, many of the specific health objectives for the nation include the young, not only young children and adolescents, but also young adults of college age. If healthy life-styles can be developed early, they may be more likely to persist throughout the years and thus exert a significant impact upon one's health later in life. Consequently, by attempting to educate the young about healthier life-styles, the federal government is looking even further down the road to help reduce health-care costs.

However, many young adults exercise or diet to improve their appearance and to feel good about themselves, not to prevent health problems such as coronary heart disease or cancer. Fortunately, with the selection of proper health-related behaviors, both short-term and long-term benefits may be achieved concomitantly.



Although relevant information regarding health protection and preventive services will be discussed, this book focuses upon health promotion practices. It is designed to help you develop a set of health behaviors that constitutes a high energy life-style, known throughout this text as a **Positive Health Life-style**. Such health behaviors stress responsibility for one's health and should enable you to increase control of your life, to maximize your ability to operate or function at or near your potential, or as a popular advertising phrase goes, to "be all that you can be." A Positive Health Life-style can maximize your ability to work at your potential in the present and will enable you to experience the joys of aging without the handicaps.

As Browning wrote, "Grow old along with me! The best is yet to be." ■

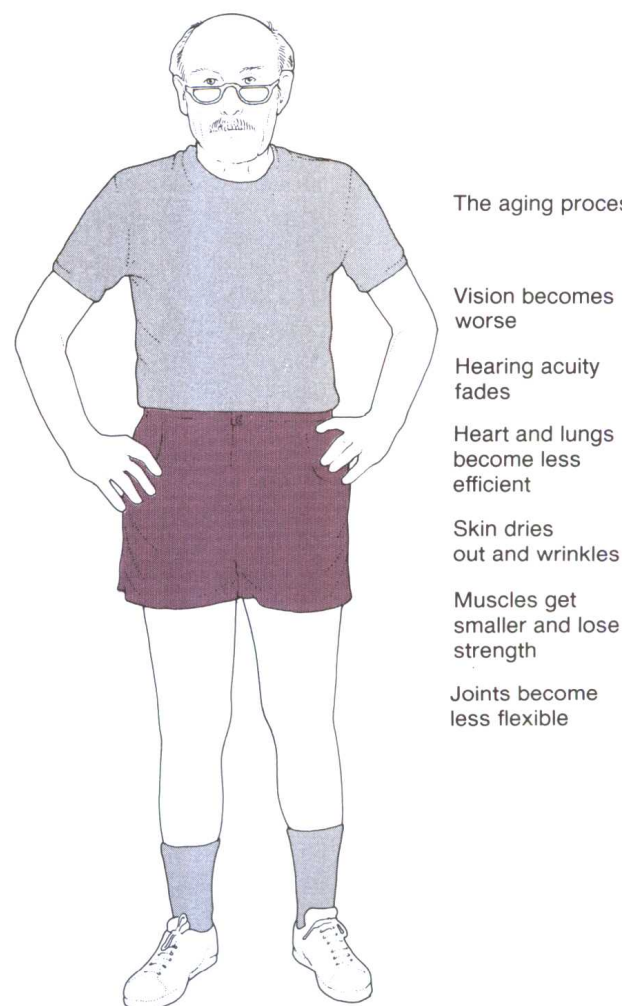
## Aging and Health Risk Factors

Although we age in different ways, we all begin to age from the first day of conception. **Chronological age** represents the passage of time. It is marked by our birthday each year and is relatively easy to determine. **Functional age** represents the capacity of the body to perform certain specific tasks and is usually evaluated in a variety of ways, such as tests of vision and hearing, physiological functioning during exercise, psychomotor ability, and health status.

Some of the changes in the aging process (such as your external appearance) are readily observable, while other internal changes are not as easily detected (fig. 1.1). We can note rather easily such changes as gray hair, impaired hearing and vision, increased body weight, stiff joints, and wrinkled skin; however, clogged arteries, less efficient lungs and heart, and diminished function of certain glands may not be readily noticed.

At the present time, chronological aging is inevitable, and many of the changes in body functions that accompany the aging process and increase functional age also appear to be inevitable. However, in an affluent society that places a high value on a youthful appearance, certain technological and medical advances counteract some of these adverse effects. We can obtain an almost undetectable aid to improve hearing, use soft contact lenses to correct vision, or undergo plastic surgery to smooth facial wrinkles. Some of these applications, however, may be unnecessary. Hearing losses may or may not be preventable, depending on whether hearing loss is a natural occurrence of the aging process or is brought about by exposure to continuous periods of loud noise during younger years. Wrinkling of the skin may be minimized by avoiding prolonged exposure to the sun or excessive use of tanning beds.

Although there exists this close general relationship between chronological and functional ages, there may be marked differences between the two, particularly in relationship to physiological functioning and health status. In other words, depending upon your life-style, you may have a younger or older functional age compared to your chronological age. For example, studies from Scandinavia and from the National Institute of Aging revealed that highly physically active individuals in their fifties and sixties had exercise capacities and



**Figure 1.1** Physiological changes associated with the aging process. A number of physiological changes occur during the natural aging process. Some of the changes, such as decreased visual ability, are not too preventable. However, others, such as decreased cardiovascular functions, may be prevented to some degree by a Positive Health Life-style.

body fat levels comparable to those of healthy but sedentary twenty-five-year-olds. Conversely, some individuals in their twenties who have abused their health may have the health status of someone in their forties or fifties.

Although some of the effects of aging may be inevitable, many that impact upon your health may be under your control. By identifying and eliminating or minimizing factors in your life-style that may be potentially harmful to your health, you may be able to reduce the rate at which you age functionally. Although you cannot stop the clock chronologically, you can maintain the physiological function and health status of a twenty-year-old for years to come.

Since your functional age may be evaluated on the basis of your health status, usually determined by the number of health risks you possess, it is often referred to as your risk age. Over the years, scientists in the field of epidemiology have identified a number of life-style factors considered to be health risks; these life-style practices are known as **risk factors**.

A risk factor is a health behavior or personal characteristic that has been associated with a particular disease. A

**Table 1.1** Risk Factors and Some Associated Health Problems

Risk Factor	Associated Health Problems
Excessive body weight	Coronary heart disease Diabetes
Low leisure-time physical activity	Coronary heart disease Obesity
Low levels of planned exercise	Coronary heart disease Obesity
Poor diet habits	Cancer Obesity
High fat and cholesterol diet	Atherosclerosis Obesity
High salt diet	High blood pressure Stroke
High blood pressure	Coronary heart disease Stroke
Excessive stress	Coronary heart disease Mental illness
Cigarette smoking	Lung cancer Coronary heart disease
Excessive alcohol consumption	Cirrhosis of the liver Motor vehicle accidents
Poor driving habits	Accidents
Poor physical exam habits	Cancer
Indiscriminate sex habits	Sexually transmitted diseases

cause-and-effect relationship does not have to be present in order to label a particular factor as a risk to health, but some form of statistical relationship between the risk factor and the presence of the disease in a given population group should be evident.

Table 1.1 presents a broad overview of some major risk factors that may be favorably modified with proper health promotion practices, or the implementation of a Positive Health Life-style. One or two of the possible health problems that may occur is listed with each risk factor.

## Life-Style Health Risk Factor Assessment Inventory

There are numerous health assessment inventories available today. Such inventories are often known as **health risk appraisals**, or **HRAs**. Some are very simple and can be completed in less than a minute, giving you a general measurement of your health life-style. Other versions are computerized and may take an hour or so to complete; they offer you an estimate of the probability of developing a particular chronic disease or forecast how many years you will live by determining your functional, or risk, age. Because validity studies of these more extensive inventories are not yet available and the reliability of several widely used HRAs has been reported to be less than desirable, we cannot verify their accuracy and will not duplicate them here. Those who are interested in such an analysis may contact several of the companies or agencies that administer them. A listing can be found in the pamphlet *Health*

*Risk Appraisals: An Inventory*, which may be obtained by writing to the National Health Information Clearinghouse, P.O. Box 1133, Washington, D.C., 20013. Your course instructor may have a source, or you may wish to contact local distributors of computer software to see what programs are available. The major point to keep in mind concerning any of these inventories is that, although they may be effective health-education tools, they are not to be used for diagnosis or for general medical screening purposes.

However, an HRA may alert you to health risks in your present life-style. Moreover, you may use a health risk appraisal to retest yourself after you have implemented behaviors consistent with a Positive Health Life-style. It might be interesting and informative to keep the results of your initial assessment and compare them to a reassessment at the end of this course.

The Life-style Assessment Inventory (Laboratory Inventory 1.1) is designed to assess your current health life-style and to give you a general idea of areas in your life that may need to be modified to achieve an optimal Positive Health Life-style. The inventory is educational in nature and will help you get a broad look at your overall health life-style. Several more detailed inventories, presented in later chapters, deal with specific topics such as dietary habits and stress profiles.

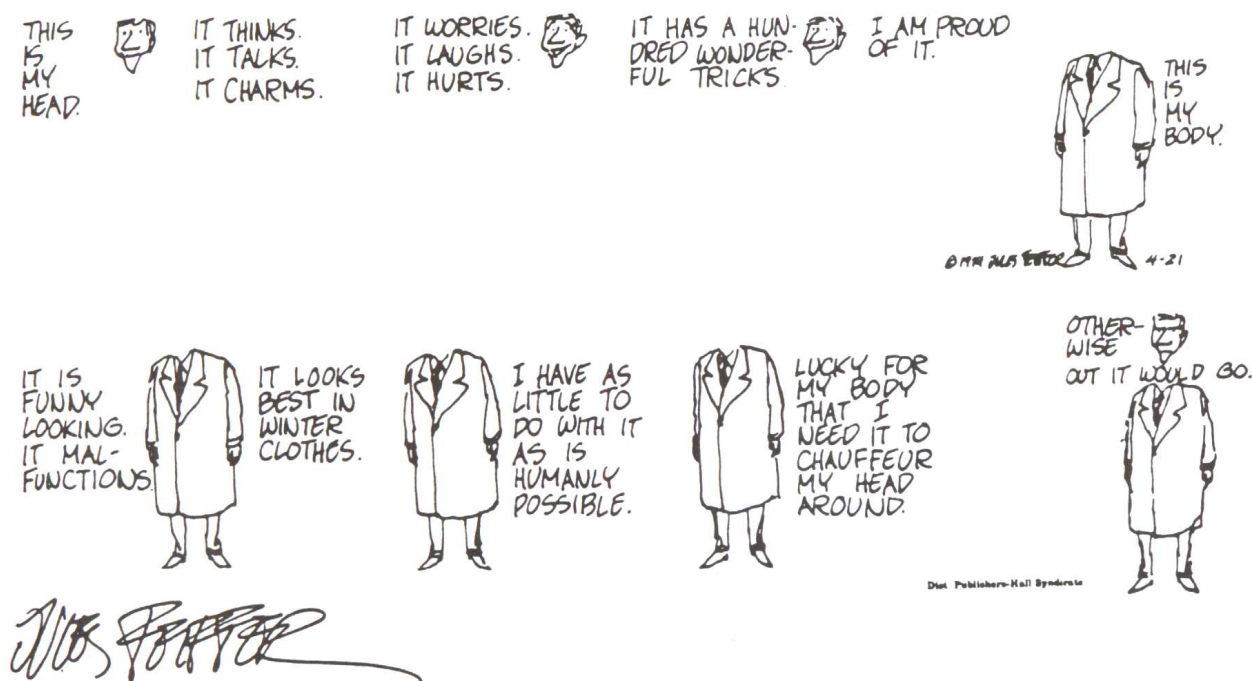
Since this inventory is general and educational in nature, it has some limitations. For example, it does not take into account family history of diseases that may exert a significant influence on your future health. A number of chronic diseases appear to be related to genetic predisposition and, thus, tend to run in some families. Moreover, it does not look at your personal health history. You may have or have had diabetes, asthma, allergies, rheumatic heart disease, or other disorders that may influence your health life-style. With these limitations in mind, please complete the Life-style Assessment Inventory at the end of the book before reading any further.

## The Positive Health Life-Style

The health objectives published in *Healthy People 2000* are an extension of a previous endeavor. In 1980 the Public Health Service established a series of health objectives for the nation with the hope of meeting these objectives in the 1990s. In subsequent years, a number of studies conducted by the PHS to evaluate progress towards these objectives found that many had already been met. In most cases, gains were in the areas of health protection services and preventive health services and were the result of legislative action or intensive national programs. For example, many state legislatures have passed laws requiring the use of seat belts; this has resulted in a decrease in motor-accident deaths. In addition, a national campaign has led to the early detection and subsequent treatment of high blood pressure in millions of individuals, resulting in a significant decrease in the incidence of heart disease and stroke.

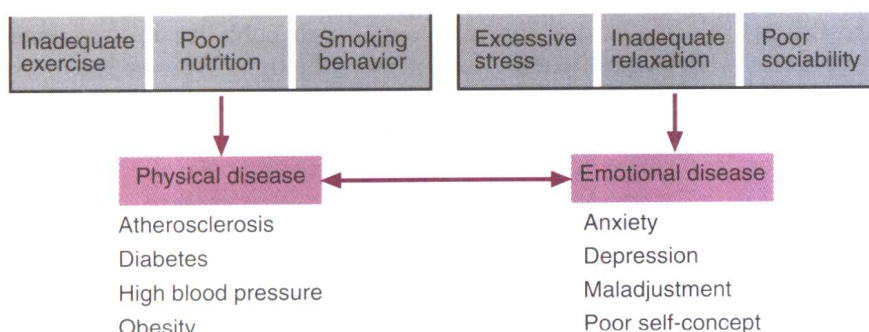
On the other hand, the PHS has noted that other areas continue to pose challenges, particularly the health promotion area. Little progress has been made in meeting the objectives





**Figure 1.2** Both a sound mind and a sound body are important to optimal health.

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**Figure 1.3** Mind-body interrelationships. Physical disease may lead to emotional disease, and vice versa. Contributing risk factors to each type of disease may be modified by positive health behaviors.

related to nutrition, body weight, fitness and exercise, and stress control. The development of a Positive Health Life-style is consistent with the health objectives set forth by the PHS in the area of health promotion.

However, a Positive Health Life-style is not concerned solely with preventing the onset of chronic disease later in life; that is only a secondary goal. Its primary goal is to achieve the healthiest body possible within natural limitations; to achieve a style of life characterized by high energy levels and a *joie de vivre*; in other words, to enhance the quality of life by increasing your healthy life span. In order to attain optimal function and optimal health, you must intellectually learn and understand how the human body functions and how to treat it well. You need to develop a life-style that, according to current medical evidence, provides you with the greatest statistical probability of remaining healthy. Adopting a Positive Health Life-style is not going to guarantee protection against all chronic diseases and health problems, but it may delay the onset of such diseases or reduce the severity of disabling symptoms and enable you to enjoy life to the fullest.

## Mind-Body Interrelationships

A Positive Health Life-style is based on a model that views the individual as a whole, such that there is a sense of unity between the mind and body, and disease processes or disturbances in one can cause disease in the other. As depicted in the cartoon in figure 1.2, we often pay a great deal of attention to our mind while we neglect to care for our body. Figure 1.3 illustrates the interrelationships between the mind and the body and some possible contributing factors to physical/emotional diseases. This partial list of contributing factors to physical and emotional diseases involves a number of life-style practices over which we have some degree of control.

## Promotion and Prevention versus Treatment

Most of us have been exposed to individuals who have developed a chronic disease and are aware of the excellent treatment they have received from our technologically sophisticated medical community. Today, physicians and hospitals are

equipped with a wide array of diagnostic tools, advanced surgical techniques, medicines, and drugs to treat some of the major chronic diseases. In many cases, what may have been a fatal disease in the past now has a favorable prognosis for partial or complete recovery. Medical advances have been phenomenal during the first 50 to 60 years of this century and have been instrumental in eradicating many of the previous causes of premature death—tuberculosis, polio, diphtheria, etc. Moreover, medical advances in the past 20 years have been even more phenomenal and are helping to treat the major chronic diseases that are now the major threats to our health. The research and development of these modern medical techniques for treating chronic and other diseases, however, has been extremely costly, with medical care costs expanding at an extremely rapid rate during the past decade. For example, at the time of this writing, a coronary artery bypass operation costs \$30,000, while a liver transplant costs \$250,000.

This rapid rise in medical care costs and an increasing tendency towards national health care legislation have helped to begin to change the focus of medical care from treatment to prevention. A spokesman for the American Medical Association has noted that 90 percent of the health problems in the United States are preventable to one degree or another, stressing personal health decisions as the key to preventing disease. In support of these remarks, a study published recently in the *Journal of the American Medical Association* has revealed that excess deaths from nine major chronic diseases (coronary heart disease, stroke, diabetes, chronic obstructive pulmonary disease, lung cancer, breast cancer, cervical cancer, colorectal cancer, and chronic liver disease) in the United States could be prevented by simple life-style changes, such as stopping cigarette smoking, controlling high blood pressure, eating a healthier diet, reducing body fat, moderating alcohol consumption, becoming physically active, and using available screening techniques for early detection of cancer.

## Prudent Health Behaviors

How do we know what effect a particular life-style change will have upon our health? To find answers to specific questions of concern to you, you should rely primarily on the findings derived from scientific research. Since this book presents a number of general recommendations concerning the impact of life-style changes on fitness and wellness, it is important to review briefly the nature and limitations of scientific research with humans that support these recommendations.

Several research techniques have been used to explore the effect of life-style on health, but the two most prevalent have been epidemiological and experimental research. **Epidemiological research** involves studying large populations to find relationships between two or more variables. For example, obesity is a risk factor associated with the development of diabetes in adulthood. Individuals who become obese have a higher statistical probability of developing diabetes than those who remain at a healthy body weight. However, no exact cause

(obesity) and effect (diabetes) relationship has yet been determined, although some plausible theories are being studied. Thus, if you become obese you may not develop diabetes, but you will increase your risk of doing so.

Epidemiological research is useful in identifying relationships among variables and inferring causality, but **experimental research** is essential to help verify a cause-and-effect relationship. In such studies an independent variable or variables (cause) is manipulated so that changes in a dependent variable or variables (effect) can be studied. With some risk factors, a direct cause-and-effect relationship can be observed. The results of epidemiological research, such as cirrhosis in alcoholics due to chronic excessive alcohol intake, often stimulate experimental research in order to establish a cause-and-effect relationship. For example, experimental studies with humans have shown significant deteriorative effects in liver function tests with the consumption of excessive amounts of alcohol over a short period of time, while experimentation with animals over a longer period of time has shown that excessive alcohol consumption causes cirrhosis of the liver. Experimental research currently is being conducted with many risk factors in order to help establish such cause-and-effect relationships.

However, it is important to realize that the results of one study with humans, even though published in a respected medical journal, do not prove anything. Studies need to be repeated by other scientists and a consensus developed; the experimental evidence should support the epidemiological findings. Unfortunately, such a consensus is often lacking to support recommendations about specific modifications for improved health, for it is very difficult to conduct experimental research with humans regarding the effect of a single life-style change on health. For example, many diseases, such as cancer and heart disease, are caused by the interaction of multiple risk factors and may take many years to develop. It is not an easy task to control all of these risk factors in freely living human beings in order to isolate one independent variable, such as dietary fat, and to study its effect on the development of heart disease over ten to twenty years.

Nevertheless, a tremendous amount of both epidemiological and experimental research has been conducted regarding the effect specific life-style changes may have upon health and wellness. Although in many cases we still do not have absolute proof that a particular health behavior will produce the desired effect, we do have sufficient information to make recommendations that are prudent, meaning that they are likely to do some good and cause no harm. Thus, the recommendations offered in this text should be considered to be **prudent health behaviors**; they are based upon a careful analysis and evaluation of the available scientific literature, including specific studies or comprehensive reviews of the pertinent research by individuals or public and private health organizations.

What are some recommended prudent behaviors that may have a positive effect on your health, happiness, and general



well-being? Several surveys have been conducted to determine whether there are any behaviors that appear to help attain or maintain a state of good health. As a general overview of what is to come in later chapters, a synthesis of these reports suggests that the following behaviors are associated with a healthy life-style.

1. Exercise. Get at least 20 minutes per day of regular, moderate, aerobic exercise at least three to four days a week. Also, increase the amount of mild exercise, such as gardening and walking, during your leisure time.
2. Nutrition. Eat wholesome, natural foods, including a good breakfast and two other healthy, well-balanced meals per day; avoid unnecessary snacking.
3. Body weight. Maintain an optimal body weight through a sound exercise and diet program.
4. Rest. Get about 7 to 8 hours of restful sleep each night; use relaxation techniques when necessary.
5. Alcohol. If you do drink, use alcohol in moderation.
6. Smoking. If you do not smoke, do not begin; stop smoking if you currently do smoke.
7. Personal environment. Avoid toxins and pollutants when possible; use care with insecticides and pesticides.
8. Personal injury. Be safety conscious; when driving, use seat belts and avoid excessive speed or use of alcohol or drugs.
9. Stress. Use socially acceptable, yet effective techniques to deal with daily problems.
10. Healthy sexuality. Practice safe sex habits.
11. Self-worth. Develop a feeling of personal value, a feeling that you are in control of your personal environment, a feeling that you are able to make personal choices. Do not equate money with success.
12. Intelligence and memory. Exercise your mind. Practice memory techniques.
13. Social ability. Practice social skills. Resolve to be cheerful and helpful. Learn to talk less and listen more.

Total health involves a balanced relationship between the mind and the body. To be totally healthy, you should possess an optimal level of both physical and emotional fitness. Both types of fitness are interrelated and very complex. Although our concern in this book is primarily with physical fitness, particularly health-related physical fitness, and the factors that may influence it, we shall also emphasize the associated relationships with emotional health.

The prudent key health behaviors addressed in the remainder of this book primarily parallel the major set of health objectives set forth by the Public Health Service in the area of health promotion. They include:

1. Physical fitness and exercise (chapters 2 to 5)
2. Nutrition (chapter 6)

3. Healthy body-weight control (chapter 7)
4. Stress management (chapter 8)
5. Cigarette smoking (chapter 9)
6. Alcohol and drug abuse (chapter 9)
7. Sexually transmitted diseases (chapter 9)
8. Health concerns of females (chapter 10)
9. Risk reduction for chronic diseases (chapter 11)

## Benefits of a Positive Health Life-Style

Many individuals do not adopt a Positive Health Life-style because it requires some personal restraint and effort. For example, they might not buckle seat belts because it takes a little effort. Moreover, Americans, in general, expect immediate results and benefits from such personal restraints and efforts. Unfortunately, many of the physiological benefits of sound positive health behaviors are not readily observable. Without medical technology, we cannot see the fall in blood lipids, the change in blood cholesterol, the increased vitality of the lungs and liver, the alteration in hormones to reduce the stress on the heart, and other such physiological changes that may help to prevent the development of certain chronic diseases. However, there are some clues that prove a Positive Health Life-style program is working. We can see our body weight begin to change, feel our breathing improve, experience less coughing in the morning, measure our slower heart rate, suffer less physical and mental fatigue, and develop a feeling of self-worth.

Although we cannot alter the true aging process at the present time, it appears that the development of positive health behaviors may help to prevent some of the adverse effects that may be due to factors other than the true aging process. One such factor may involve **disuse phenomena**, which, simply translated, means that if we don't use something, we lose it. Physical abilities, intellectual capacity, memory, and social skills may deteriorate if they are not continually utilized. Thus, disuse may add to the deterioration that usually occurs in these processes as a natural consequence of the true aging process.

Numerous research studies have indicated that a proper exercise program and other positive health behaviors can aid in slowing down many physiological aging processes. Table 1.2 presents some aging factors that may be ameliorated by personal choice of a positive health behavior.

As noted in figure 1.4, your preparation for a healthy life in your later years should begin when you are young. Although individuals of all ages, even those in their sixties and seventies, may obtain health benefits from the implementation of a Positive Health Life-style, the benefits will be greater if initiated early in life. As a college-aged student, you are in an enviable position to initiate such a life-style and reap the benefits. Nevertheless, it is never too late to reap some of the benefits resulting from a Positive Health Life-style.