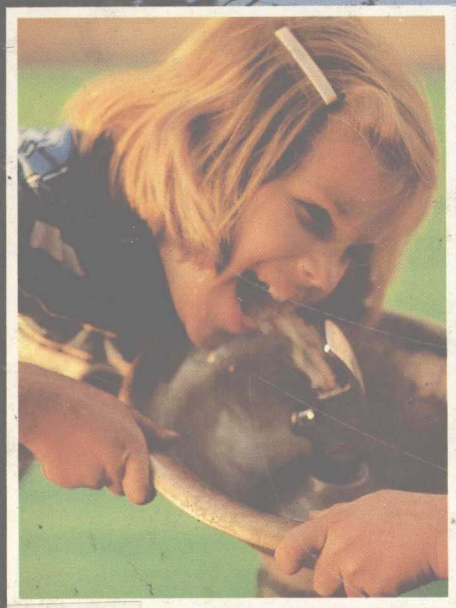


FIFTEENTH EDITION



TURNER'S PERSONAL AND COMMUNITY HEALTH

BROOKS AND BROOKS

TURNER'S

PERSONAL AND COMMUNITY HEALTH

Revised by

STEWART M. BROOKS and **NATALIE A. BROOKS**

FIFTEENTH EDITION

with 243 illustrations



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FIFTEENTH EDITION

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CLAIR E. TURNER

1890-1974

Professor Turner's career spanned more than 60 active years. This book and *School Health and Health Education* are his best known written works. Through the previous fourteen editions of this text and the seven editions of the other, thousands of students have obtained health information and have developed attitudes relevant to their personal lives. Many have been inspired to enter careers in the areas of school and community health education.

Dr. Turner was a distinguished teacher and researcher, as well as a writer. At Massachusetts Institute of Technology, he taught the first course in health education ever offered in a school of public health and originated the first program leading to the Master of Public Health degree in health education. His studies and demonstrations in the Malden, Massachusetts, schools during the 1920's laid the foundation for much of what is done today in the field of school health and health education. During and after World War II much of his effort was directed toward the improvement of international health, primarily through his work with the World Health Organization and with the United Nations Educational, Scientific, and Cultural Organization. He was the first president and chief advisor of the International Union for Health Education and the honorary president of that organization from 1968 to 1974. In addition, he was active in and honored by a host of other health-related organizations.

In undertaking the task of rewriting and revising this edition of *Personal and Community Health*, we were deprived of Professor Turner's wisdom and criticism. Any deficiencies are to be charged to us, not to him.

Preface

With this edition, *Turner's Personal and Community Health* enters its fifth decade. First published in 1925, it became the standard text in the field. Doctor Turner wrote with clarity, conciseness, and just the right flavor for readability. He was a pioneer in the teaching of public health at the undergraduate level and distinguished himself both in the classroom and in this work by successfully conveying the idea that the abolition of disease and the maintenance of health emanate from the community in general and the individual in particular. The publisher and revising authors have employed this principle as the framework of the revision process, always asking ourselves how Doctor Turner would have written it. In other words, every effort has been made to process new information in the Turner manner.

In this edition a number of additions and alterations have been made in response to both new developments and readers' suggestions. A comprehensive overview of biologic principles now prefixes all chapters on the body systems and a special chapter on the disease process (The Meaning of Disease) makes its debut. The chapter on medical care and the chapter on safety have been greatly expanded to encompass the many changes and concerns in these areas. To maintain proper balance, expansion calls for judicious streamlining and this, too, has been practiced throughout all areas. For example, the subjects of dental health and communicable diseases have undergone both distillation and embellishment. All in all, every effort has been made to meet the needs of the student.

Stewart M. Brooks
Natalie A. Brooks

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PART ONE

PERSONAL HEALTH

FIG. 1-1

How would you define or evaluate health, attractiveness, efficiency, and personality?



CHAPTER ONE

The meaning of health

Health and knowledge
Health values
Health progress and problems
Health potential
Student health
Health appraisal

As defined by the World Health Organization, health is “a state of complete physical, mental, and social well-being, not merely the absence of disease or infirmity.” Certainly, health is much more than merely not being “sick in bed.” There are degrees of “wellness,” just as there are degrees of illness. Physical, mental, and social well-being are interrelated. There is, for example, a great difference between optimal nutrition and nutrition that is merely adequate to prevent obvious disease or between an athlete and a man who has only sufficient vigor to carry on a sedentary occupation.

Normal functioning of all parts of the body contributes not only to efficiency and the ability to do a full day’s work without more than healthful fatigue, but also to cheerfulness, attractiveness, courage, and enthusiasm for life. Conversely, mental, emotional, and social well-being contribute to physical health. In its various phases and to the degree that it is present, health makes possible a higher quality of living.

The desire for a feeling of personal worth is clearly an important driving force in our lives. Health helps us to attain this end by making possible a higher quality of service.

Health and knowledge

Basic to the maintenance of health is an understanding of physical and mental fitness and the means by which they are secured. Sound decisions in matters of personal and community health come from logical reasoning based on a knowledge of the scientific facts involved. Better health comes, of course, not from the mere acquisition of health knowledge but from its application. In other words, health depends not only on what we know but also on what we do. Even though we know cigarette smoking causes lung cancer, many people continue to smoke. Knowledge, in itself, is not enough to make all people stop. It is a *behavioral* problem as well as an edu-

cational one. Repeated warnings—those on cigarette packages, for instance—changing social norms, the work of such groups as Smokers Anonymous, and informed decisions, such as the one to ban all cigarette advertising on television, have all helped people to quit or, even more important, not start the habit at all.

In maintaining health we are caring for a mechanism—the human body—that has no equal. One of its most remarkable qualities is the constant tendency to keep itself in physiologic balance or dynamic equilibrium. This steady state of the internal environment of the body is called *homeostasis*. Any physical or chemical change away from normal sets in motion *compensatory* mechanisms that tend to correct the imbalance. In this way the body is like a device such as the automobile automatic gear shift, which makes needed adjustments by itself. When the engine approaches an uneconomic rate of operation, there is an automatic shift to a higher gear. The body likewise has innumerable automatic physiologic mechanisms. It maintains, for example, the same temperature in the desert and in the arctic circle. It maintains a balance of the volume and distribution of body fluids and an acid-base balance. Such compensatory mechanisms will not maintain health in spite of every possible injury, such as from poisons, pathogenic organisms, and the abuses of unhygienic living, but it is encouraging to know that we have such mechanisms. Health is influenced by heredity, environment, and behavior, but the tendency and ability of the body to adjust automatically to changing conditions and to maintain normal functions are powerful forces in health maintenance.

Health values

The attention a person gives to the study and maintenance of health depends on the place of health in his system of values. Should we sacrifice health for other aims, or should other things in life be sacrificed for health? The problem is one of relative values. The person who is struggling against sickness or disability invariably places an exceedingly high value on health. This person says, "Health is the most im-

portant thing in life." Those who have the least health value it the most. The variation in evaluation comes from the difficulty of humans to appreciate what they have always possessed. Contrast sharpens vision. Things lost take on new values.

Health is certainly not the ultimate aim of life. There are more important things. Honor, integrity, justice, and freedom have been maintained at the cost of human life. Everyone has a normal ambition to perform some useful service in life. This ambition may be worthy of a sacrifice of health, but sacrificing health does not in itself accomplish the ambition. In fact, it usually defeats it.

The health of a nation has significance beyond the relationship between the health of the individual citizen and his happiness and contentment. Disease is an economic burden that lowers both production and the standard of living. Furthermore, war has periodically thrown nations into a struggle for existence in which the physical vigor of the people has been one of the important factors determining national survival.

Health progress and problems

With the growth of scientific knowledge we have reduced the death rate to a remarkable degree. A little over a century ago the annual death rate in large American cities was approximately 30 deaths per 1,000 people. Today the annual death rates in the same cities are well below 10 per 1,000. The probable length of life for a baby born today is over 70 years or twice as great as that of one born in colonial days. In most cities less than one-fourth as many babies now die during the first year of life as in 1900.

Since the days of the cave dwellers, humans have developed skill in the production and storage of food. They have learned to protect themselves from inclement weather. They have subdued or exterminated animals that were once mortal enemies. The battle against disease in all its forms is one phase of the continuing struggle to improve the security and the quality of existence.

The gradual conquest of disease is reflected in military experience. The United States Army disease

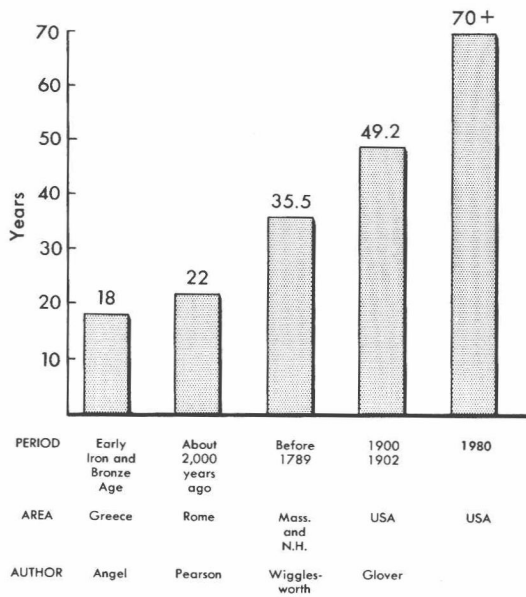


FIG. 1-2
Average length of life from ancient to modern times. (Redrawn from Statistical Bulletin, Metropolitan Life Insurance Co.)

death rate per 1,000 in successive wars has been as follows: Mexican War, 110 (seven times the battle deaths); the Civil War (North), 65 (twice the battle deaths); World War I, 16 (one-third of the battle deaths); World War II, 0.6. World War I was the first great war in which disease deaths were fewer than battle deaths. Deaths among the wounded also dropped—from 8.3% in World War I to 4.5% in World War II to 1% in the Vietnam War. These changes reflect advances in sanitation, preventive medicine, surgery, and chemotherapy.

Public health progress in the most highly developed countries, including the United States, has been spectacular during the last century. One disease after another has been brought under control. At the same time new diseases and health problems have appeared and the maintenance of personal and community health still presents many challenges. In these days of changing cultural patterns, continuing urbanization and industrialization, increasing speed of world transportation, and growing effects of the population explosion, society faces acute problems in mental and

emotional health, poverty, healthful family living, housing, water and air pollution, disposal of urban wastes, spread of viral disease, increases in venereal disease, drug addiction, costs of medical care, and expanding the health services of government.

These are only a few of the problems demanding study and attention. Some require community action; in others, the maintenance of health is dependent on the individual's ability and willingness to assume responsibility for his or her own health. Developments and programs in some of these fields, such as medical care, drug addiction, pollution, atomic waste, and family planning, are so active that the daily news frequently supplements the basic facts in the study of personal and community health.

Health potential

Health potential of the individual depends on the kind of body mechanism inherited and on the care of that mechanism—somewhat as the efficiency and service of an automobile depend on the mechanism and its care. What a race horse can do depends on its inheritance, its handling, and its training. Inheritance is never the whole factor. The history of athletics tells of scores of individuals who have achieved distinction in spite of either specific handicaps or a rather frail body in early childhood.

Of course, we do not regard health and athletic achievement as synonymous. Not all healthy persons are athletes. However, speed, stamina, alertness, quick mental decisions, and neuromuscular skill reflect an efficient body mechanism. Achievement in athletics by young men and women who are willing to pay the price in effort and training shows what can be done with the body. Conversely, the wreckage of bodies or minds by abuse or lack of care shows that health is largely within our own control. We can move in either direction in health status and physical or mental output.

Student health

In college the student has many aids and opportunities for health maintenance and improvement. One

TABLE 1-1

Percentage of college students showing various physical conditions*

Condition reported	Males (%)	Females (%)	Average (%)
Tonsils removed	59	60	59 (55.6)
Color blind	28	—	28
Defective vision†	52	56	54
Corrected vision	23	26	24
Impaired hearing	15	12	14 (11.6)
Tonsillar defects	11	11	11 (15.6)
Enlarged thyroid	1	1	1
High blood pressure	23	4	16 (6.8)
Heart abnormalities	5	6	5 (7.9)
Hernia	13	—	13
Varicocele	13	—	13
Flatfeet	4	14	7 (19)
Acne	17	16	17
Dysmenorrhea	—	23	23
Dental defects			(58.9)
Nasal obstruction			(35.5)

*Data from Health Service, University of Kansas, based on the examination of 311 freshmen males and 177 freshmen females, and from Diehl and Shepard's study on health of college students based on the examination of a large number of students in several colleges (latter figures are in parentheses).

†Not 20/20 in both eyes.

is the student health service. It provides emergency care in case of accident or sudden illness. It assesses health status through medical examination or from information supplied by the family physician. It follows through in the correction of remediable defects. Another aid to health is the physical education program. The modern college thus provides a healthful environment and assistance in varying degrees in solving food, housing, recreation, and personality problems. Physicians, nurses, dietitians, physical educators, health educators, and coaches, as well as teachers, deans, and advisers, are resources in developing physical, mental, and social well-being.

A program of building health starts with an appraisal of health. Acquainting oneself with the nature of health examinations and with the significance of the medical findings is fundamental. If these findings have implications for the college program, the neces-

sary adjustments should be made with the advice of the physician and faculty adviser. Table 1-1 reflects the health status of typical groups of college students. The specific figures in the table are not significant, but it is interesting to see the common departures from health among young people and the conditions that occur most frequently.

If a first step in the student's health program is correcting remediable conditions or adjusting to a condition that is not remediable, it is certainly not the last. Although the student's health resources are remarkable, each individual is probably more on his or her own than ever before. It is the student, with help, who is responsible for developing desirable qualities of mind, body, and personality.

A good health program is a factor in personality development. Qualities commonly listed in determining a person's strength of personality are (1) ambition, (2) industriousness, (3) persistence and patience, (4) dependability, (5) forcefulness, (6) effectiveness of speech, (7) self-confidence, (8) friendliness, (9) adaptability, (10) tact, (11) cheerfulness, (12) good judgment, (13) sensitiveness to criticism, (14) ability to size up people, (15) memory, (16) neatness, and (17) health habits. The student should evaluate habits to see if they are the kind that build for or against good health and how they affect his or her working ability and mental attitude day by day.

Each student has to make personal adjustments to academic life. This involves budgeting time for study, recreation, rest, eating, sleeping, and grooming. It involves following a sound schedule in obtaining adequate nutrition and physical activity. It involves improving skills in listening, reading, writing, studying, and taking examinations. New health topics or assignments are approached by making a brief survey of the headings and major topics. The topics may suggest questions for which the student wants answers. Then the assigned copy and such supplementary material as will be helpful are read, giving attention to charts, graphs, tables, and illustrations. Difficult sections may be reread. Problems often receive clarification in class discussions.

The alert student arranges a study place with proper lighting, chair, table, ventilation, and quiet. He or she