WELLNESS
AND PHYSICAL THERAPY

SHARON ELAYNE FAIR, PT, MS, PhD
President of The Wellness Society
Dedication

I dedicate this book to my daughter, Embury Elayne Fair-Russell, whom I love more than the universe is big and always will, and my brother, Michael James Fair, who sacrificed his life for our country and whom I continue to love and miss every single day.
Contents

Preface. .............................................. xvii
Acknowledgments ........................................ xxii
Introduction by the Series Editor .............................. xxiii

Chapter 1 The Basics of Wellness ............................. 1
Objectives .............................................. 1
Section 1: Health and Wellness .............................. 2
Health .................................................. 2
Health Promotion ...................................... 2
Wellness ............................................... 3
Health Versus Wellness .................................. 4
Summary: Health and Wellness ............................ 5

Section 2: Prevention ..................................... 5
Primary Prevention ..................................... 5
Secondary Prevention ................................... 5
Tertiary Prevention .................................... 6
Prevention: Present and Future ............................ 6
Summary: Prevention ................................... 7
| Section 3: Healthy People .................................................. 7 |
| Summary: Healthy People .................................................. 8 |
| Section 4: Wellness Models and Surveys ................................. 8 |
| Illness–Wellness Continuum .................................................. 9 |
| Ardell’s Models of Wellness .................................................. 9 |
| The Six-Dimensional Model of Wellness ................................. 9 |
| Holistic Model for Wellness and Prevention Over the Life Span .... 10 |
| Perceived Wellness Model ................................................... 11 |
| Humanistic Model of Wellness ............................................. 12 |
| Summary: Wellness Models .................................................. 12 |
| Section 5: Stages of Wellness: Examination, Evaluation, Plan of Care, and Interventions ................................. 13 |
| Primordial Stage .............................................................. 13 |
| Pre-Contemplation Stage ..................................................... 14 |
| Contemplation Stage .......................................................... 14 |
| Preparation Stage .............................................................. 14 |
| Action Stage ................................................................. 15 |
| Maintenance ................................................................. 15 |
| Permanent Maintenance Stage ............................................. 16 |
| Summary: Stages of Wellness ............................................... 18 |
| Section 6: Surveys to Assess Wellness ..................................... 19 |
| Summary: Surveys to Assess Wellness ..................................... 20 |

**Chapter 2 The Application of Wellness to Physical Therapy** .................. 21

**Objectives** ........................................................................... 21

**Section 1: Wellness Practitioners** ........................................ 22
| Disciplines That Contribute To and Impact Wellness .................. 22 |
| Credentials ................................................................. 22 |
| Provider Expertise .......................................................... 23 |
| Summary: Wellness Practitioners ........................................... 23 |

**Section 2: Physical Therapy Services: Restorative, Maintenance, Prevention, and Wellness** .................. 23
| Restorative Physical Therapy ............................................... 24 |
| Maintenance Physical Therapy ............................................. 24 |
| Prevention Physical Therapy .............................................. 25 |
| Wellness Physical Therapy .................................................. 25 |
| Standards of Care and Malpractice ....................................... 25 |
| Summary: Physical Therapy Services .................................... 26 |

**Section 3: Physical Therapy Education** ................................... 26
| Summary: Physical Therapy Education .................................... 28 |
Section 4: Why Should Physical Therapists Possess an Operational Knowledge of Wellness? ........................................ 29
  Patient Questions Related to Wellness ................................................................. 30
  Physical Therapists Are Wellness Role Models ........................................... 30
  Summary: Why Should Physical Therapists Possess an Operational Knowledge of Wellness? ........................................ 31

Chapter 3 Physical Therapy and Wellness: Past, Present, and Future ........ 33
  Objectives .................................................................................................................. 33
  Section 1: Roots of Physical Therapy and Wellness ........................................... 34
    Summary: Roots of Physical Therapy and Wellness ........................................... 35
  Section 2: Precursors of Wellness and Physical Therapy in the United States .................................................................................. 36
    Summary: Precursors of Wellness and Physical Therapy in the United States .................. 38
  Section 5: The First Half of the 20th Century: Birth of the Physical Therapy Profession .................................................................................. 38
    Summary: The First Half of the 20th Century: Birth of the Physical Therapy Profession .................................................................................. 38
  Section 4: The Second Half of the 20th Century: Physical Therapy and Wellness .................................................................................. 39
    The 1960s Through the 1980s ........................................................................ 39
    The 1990s .............................................................................................................. 41
    Summary: The Second Half of the 20th Century: Physical Therapy and Wellness .................................................................................. 43
  Section 5: Physical Therapy’s Expansion of Wellness in the New Century .................................................................................. 43
    The Years 2000 Through 2004 ........................................................................ 43
    The Years 2005 Through 2008 ........................................................................ 45
    Summary: Physical Therapy’s Expansion of Wellness in the New Century .................................................................................. 46
  Section 6: Future Relationship Between Physical Therapy and (Fitness) Wellness .................................................................................. 47
    Summary: Future Relationship Between Physical Therapy and (Fitness) Wellness .................................................................................. 49

Chapter 4 Physical Wellness ................................................................................. 51
  Objectives .................................................................................................................. 51
  Section 1: Physical Wellness .................................................................................. 52
    Diseases and Medical Wellness ........................................................................ 52
    Pharmaceuticals and Drugs and Drug Wellness ............................................. 53
Chapter 5 Physical Wellness and Nutrition

Objectives

Section 1: Nutritional Wellness and Scope of Care of Physical Therapy Practice

Summary: Nutritional Wellness and Scope of Care

Section 2: Basic Terminology and Concepts

Alcohol

Athletes

Beverages

Caloric and Caloric Intake

Carbohydrates

Coffee

Dietary Reference Intake, Reference Daily Intake, and Recommended Daily Intake
Contents

Dietician (Versus Nutritionist) ........................................... 70
Fats ................................................................................. 70
Fiber ............................................................................... 71
Fruits .............................................................................. 72
Grains ............................................................................. 72
Milk and Dairy Products ...................................................... 73
Minerals ........................................................................... 73
Oils and Fats ..................................................................... 74
Protein ............................................................................. 74
Protein-Rich Foods ............................................................... 75
Soda Beverages ................................................................ 75
Soups, Sauces, and Gravies .................................................. 75
Substrates and Substrate Intake ........................................... 76
Sugary Foods ..................................................................... 76
Vegetables ....................................................................... 76
Vegetarians ..................................................................... 77
Vitamins .......................................................................... 78
Water ............................................................................... 78
Summary: Basic Terminology and Concepts ................................. 78
Section 3: Nutritional Wellness Pyramids ................................ 78
Summary: Nutritional Wellness Pyramids ................................. 82
Section 4: History of Nutritional Wellness ................................. 82
History ........................................................................... 82
Historical Nutrition Survey .................................................. 82
Analysis of History of Nutrition ............................................ 84
Summary: History of Nutritional Wellness ............................... 84
Section 5: Systems Review of Nutritional Wellness ..................... 84
Analysis of Nutritional Wellness Systems Review ..................... 86
Summary: Systems Review of Nutritional Wellness ................... 86
Section 6: Tests and Measures of Nutritional Wellness .................. 86
Section 7: Nutritional Wellness Evaluation ............................... 95
Evaluation ........................................................................ 95
The Typical Patient/Client .................................................... 98
Categories of Reference Patients/ Clients ............................... 99
Summary: Nutritional Wellness Evaluation ............................... 100
Section 8: Nutritional Wellness Conditions and Diagnoses .......... 100
Conditions ....................................................................... 101
Vegetarianism .................................................................. 101
Athleticism ...................................................................... 101
Summary: Nutritional Wellness Conditions and Diagnoses .......... 102
Section 9: Prognosis, Plan of Care, and Goals

Nutritional Wellness Prognosis
Nutritional Wellness Plan of Care
Nutritional Wellness Goals
Prognosis of Goals
Plan of Care and Goals Related to the Food Groups
Plan of Care and Goals Related to Caloric Input
Plan of Care and Goals Related to the Nutritional Substrates
Plan of Care and Goals Related to the Athlete
Summary: Prognosis, Plan of Care, and Goals

Section 10: Nutritional Wellness Interventions and Global Outcomes

Interventions
Global Outcomes
Summary: Nutritional Wellness Interventions and Global Outcomes

Chapter 6 Physical Wellness and Fitness

Objectives

Section 1: Scope of Physical Therapy Practice
Summary: Scope of Physical Therapy Practice

Section 2: Basic Terms and Concepts
Anabolic Steroids
Athletes
Caloric Output
Dehydration and Hydration
Examination of Fitness Wellness
Isometrics, Isotonic, and Isokinetics
Substrate Supplementation
Warm-Up and Cool-Down
Summary: Basic Terms and Concepts

Section 3: Examination: History
Analysis of the History of Fitness and Fitness Wellness Survey
Summary: History

Section 4: Examination: Systems Review
Analysis of the Fitness Wellness Systems Review
Summary: Systems Review

Section 5: Examination: Tests and Measures
Fitness Wellness Tests and Measures
Section 12: Fitness and Fitness Wellness Interventions and Global Outcomes .......................... 168
Interventions ........................................................................................................................................... 168
Global Outcomes ..................................................................................................................................... 169
Summary: Fitness Interventions and Global Outcomes ................................................................. 170

Chapter 7 Physical Wellness and Body Composition ................................................................. 171
Objectives .................................................................................................................................................. 171

Section 1: Scope of Physical Therapy Practice .............................................................................. 172
Summary: Scope of Physical Therapy Practice .................................................................................. 172

Section 2: Basic Terms and Concepts ............................................................................................ 173
Basal and Resting Metabolic Rate ........................................................................................................ 173
Body Composition .............................................................................................................................. 173
Body Mass Index .................................................................................................................................. 173
Body Classification: Ectomorph, Endomorph, Mesomorph ......................................................... 173
Body Type: Android and Gynoid ......................................................................................................... 174
Caloric Input and Caloric Output ........................................................................................................ 174
Dietary-Induced Thermogenesis ........................................................................................................ 174
Examination of Body Composition Wellness .................................................................................. 175
Fat Mass .................................................................................................................................................. 175
Hyperplasia and Hypertrophy of Fat Cells ....................................................................................... 175
Lean Body Mass ....................................................................................................................................... 175
Obese ...................................................................................................................................................... 175
Overfat .................................................................................................................................................... 175
Overweight .............................................................................................................................................. 175
Set Point Theory .................................................................................................................................... 176
Summary: Basic Terms and Concepts ............................................................................................. 176

Section 3: Examination: History ....................................................................................................... 176
Analysis of History of Body Composition and Body Composition Wellness ................................ 177
Summary: History ................................................................................................................................. 177

Section 4: Examination: Systems Review ....................................................................................... 177
Analysis of the Body Composition Screen and Body Composition Wellness Screens .................. 180
Summary: Systems Review .................................................................................................................. 180

Section 5: Examination: Tests and Measures .................................................................................. 180
Body Composition Wellness Tests and Measures ............................................................................. 181
Body Composition Tests ..................................................................................................................... 181
Summary: Tests and Measures ............................................................................................................ 187
CONTENTS

Social Wellness ............................................. 208
Social Responsibility of Physical Therapists ............... 209
Stress, Anxiety, Burn Out, Relaxation, and
Antistress Wellness ........................................ 209
Summary: Basic Terms and Concepts ....................... 211
Section 3: Examination: History ............................. 212
Analysis of the History of the Mental and Social Wellness Survey .... 213
Summary: History ......................................... 213
Section 4: Examination and Systems Review ................ 214
Analysis of the Mental and Social Wellness Systems Review ...... 215
Summary: Systems Review .................................. 215
Section 5: Examination: Tests and Measures ............... 215
Summary: Tests and Measures ................................ 220
Section 6: Evaluation of Mental and Social Wellness ........ 220
Analysis of the Mental and Social Wellness Survey ........ 220
Summary: Mental and Social Wellness Evaluation .......... 223
Section 7: Mental Diagnoses and Mental and Social
Wellness Conditions ....................................... 224
Mental Diagnoses and Mental and Social Conditions ........ 224
Diagnosis: Anxiety (300.02) ................................ 224
Diagnosis: Adjustment Disorder (309.0–309.9) .............. 224
Condition: Impaired Mental Wellness—Stress/Anxiety ....... 225
Diagnosis: Major (296) and Minor Depression (311) ...... 225
Condition: Impaired Mental Wellness—Depression ......... 225
Condition: Impaired Emotional Wellness—Self-Esteem ..... 226
Diagnosis: Body Dysmorphic Disorder (300.7) ............ 226
Diagnosis: Anorexia Nervosa (507.1) ...................... 226
Diagnosis: Bulimia Nervosa (507.51) ...................... 226
Diagnosis: Binge Eating (783.6) .......................... 227
Condition: Night-Eating Syndrome ....................... 227
V-Code: Malingering (V65.2) ............................ 227
Diagnosis: Factitious Disorder (300.16; 300.19) .......... 227
V-Code: Noncompliance with Treatment (V15.81) ......... 227
Condition: Impaired Social Wellness ..................... 228
Summary: Mental Diagnoses .............................. 228
Section 8: Mental and Social Wellness Goals and Prognosis .... 228
Summary: Goals and Prognosis ......................... 229
Section 9: Mental and Social Wellness Plan of Care ........ 229
Mental Health Models .................................... 229
Plan of Care for Specific Conditions or Disorders .......... 233
Summary: Plan of Care .................................... 235
Preface

Two roads diverged in a wood, and I—
I took the one less traveled by,
And that has made all the difference.

Robert Frost

PHYSICAL THERAPY EDUCATORS

This book was designed to meet or exceed the educational objectives related to wellness outlined in A Normative Model of Physical Therapist Professional Education: Version 2004. Accordingly, this textbook can be utilized, and it is indeed suggested that it be adopted, as a (required) textbook in the wellness courses offered by the entry-level physical therapy programs accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE).

Some entry-level physical therapy programs require two courses related to wellness: an introductory course and a more advanced course. For example: “Wellness I” and “Wellness II”; or “Health Promotion and Wellness for Physical Therapy Practice I” and “Health Promotion and Wellness for Physical Therapy Practice II.” This two-tier model mirrors the multistep model deemed appropriate and employed for other core subject matters and specialties, such as musculoskeletal and neuromuscular curricula and research. (Note: I believe the two-tier system is the best model for wellness pedagogy.) In those cases in which this textbook is adopted for use in a two-tier model of wellness pedagogy, the contents of the book may be readily divided as indicated by the number of credit hours per course and at the discretion of the professor.
Many physical therapy programs offer a single course related to wellness. These courses are known by a variety of names, such as “Health and Wellness,” “Prevention and Wellness,” “Physical Therapy Constructs of Health and Wellness,” “Health Promotion and Disease Prevention,” or simply “Wellness.” In some cases, the course is offered early in the curriculum (e.g., term two); in other cases, it is offered relatively late in the curriculum (e.g., term seven). Placement of the wellness course will be a factor in how to best utilize this textbook to meet or exceed the objectives of *A Normative Model of Physical Therapist Professional Education: Version 2004*. For example, if the wellness course is offered early in the curriculum, perhaps a mock, rather than an authentic, community wellness project might be appropriate. However, if the wellness course is offered later in the curriculum, a genuine community wellness project might be indicated and of substantial benefit.

Some physical therapy programs do not offer a “wellness” course, and instead integrate topics related to wellness into another course or courses. In these cases, the contents of this book may be integrated into the program’s classes/modules/labs related to wellness. If the wellness content is divided into two or more courses, it may be a challenge for the professors to integrate the information from the textbook into their respective courses. However, these challenges can be overcome with communication and coordination among the involved faculty. One suggestion is for involved faculty to agree upon which chapter will be examined in which course.

Indeed, the task of serving as one of the required textbooks (if not the only textbook) in a wellness course(s) in a physical therapy program is daunting. The reasons include, but are not necessarily limited to (1) the relationship between physical therapy and wellness has not been clearly delineated (Culver, 2007); (2) compared to subject matter that has traditionally been offered in physical therapy curricula and is often considered to be “core coursework” (such as musculoskeletal and neuromuscular curricula), wellness is a relatively new concept; and (3) compared to traditional specialties (such as gerontology and women’s health), wellness is an emerging forte. Few physical therapists or physical therapist faculty members possess an “expertise” in wellness. Accordingly, it can be speculated that fewer physical therapy programs appreciate the uniqueness of wellness and recognize the value of a multitier model of wellness pedagogy and the necessity of requiring a wellness-related textbook. The challenges that face a textbook relating physical therapy and wellness may be exemplified by comparing the number of physical therapy textbooks dedicated to traditional subject matters to the number of physical therapy textbooks related to wellness. This textbook is a first step in a largely unchartered territory to elucidate the provision of wellness by physical therapists.

### PHYSICAL THERAPY STUDENTS

This textbook is designed to serve as an educational tool for you to learn about wellness and its relationship to the provision of physical therapy. This is the first textbook with this long-overdue goal.
As you should be aware, *A Normative Model of Physical Therapist Professional Education: Version 2004* includes educational objectives related to wellness, just as it includes educational objectives related to such areas as orthopedics and neurology. The contents of this book are designed to meet or exceed CAPTE's educational objectives related to wellness and are poised to meet the wellness-related educational objectives in the next edition of *A Normative Model of Physical Therapist Professional Education*.

Historically, the focus of physical therapy has been restorative care (Moffat, 1996). This means that physical therapists primarily provided rehabilitative care to patients who had a disease (e.g., Parkinson's disease) or had been injured (e.g., presented status post sprain or fracture). While current-day physical therapists still provide this type of care, more and more are learning about and providing wellness-related care.

The three dimensions of wellness are physical, mental, and social wellness, and each of these is linked to the provision of physical therapy. Of the three dimensions of wellness, physical therapists are best educated and trained to provide certain types of physical wellness, particularly body composition and fitness wellness. While physical therapists can directly provide these aspects of physical wellness (e.g., by teaching a patient/client about aerobic capacity and facilitating an improvement in her/his exercise regimen), they can and should also integrate wellness into their restorative care. For example, a physical therapist might utilize her or his knowledge related to mental wellness to motivate a patient/client to adhere to the home program the physical therapist has designed.

I am confident that your exploration of this textbook will provide a solid foundation to provide direct wellness services as well as to integrate wellness into your restorative practice. I wish you the best!
Although this book is dedicated to my daughter, Embury Fair-Russell, and my brother, Michael Fair, I also wish to acknowledge the unique contributions these two wondrous individuals have made to my life, which, among other things, propelled me to fulfill my childhood dream of becoming a writer.

I also acknowledge other family members who have contributed to the completion of this book in one form or another, including my dad, Donald Fair, and my late paternal grandfather, Joseph Fair. In particular, I thank my mom, Perena Cianelli-Fair. When I attempted to express myself through poetry, she gifted me Robert Frost’s *The Book of Poetry* and closed her inscription with “To my creative writer.” And during the seemingly eternal process of writing this book, she offered continuous encouragement.

Professionally, I acknowledge those colleagues who have supported my interest and expertise in wellness, including, but not limited to, former University of St. Augustine for Health Sciences faculty members Emily Fox, PT, MA; Patricia (Trish) King, PT, MA, MTC; and David Lehman, PT, PhD. I am especially grateful to Dr. Fox for her support of my pursuit of the triad of wellness. I also value the criticisms received from certain colleagues in response to my attempts to catechize others, including them, that wellness mirrors the World Health Organization’s (1947; 2009) unwavering definition of health, and that consequently wellness consists of three and only three dimensions of wellness.

Acknowledgments
(i.e., physical, mental, and social). In part, it was their insistence upon what might be
described as a “pre-Copernican” perception of wellness that has propelled me, and will
continue to propel me, to educate myself and others about the enlightened concept of
the triad of wellness.

If a flower is of a fair seed, its roots are embedded in hardy soil,
and there is adequate sunshine,
Even a dreary rain from a murky cloud helps that flower to blossom.

Tamar Fair

Last but not least, I acknowledge my physical therapy wellness clients and my physi-
cal therapy “restorative” patients. My wellness patients and clients have inspired me to
share with others, including current and future colleagues, my understanding of the rela-
tionship between wellness and physical therapy. As I teach and help my patients and
clients, they teach and help me. As they thank me, I thank them. As I bring well-being
into their lives, they bring well-being into mine.
Enhancing and restoring physical fitness and wellness by way of specific exercise instruction and education with regard to exercise and healthy living habits has been a cornerstone of physical therapy from the inception of the profession. In fact, it was the concern about declining levels of physical fitness in new military recruits that directly contributed to the emergence of physical education in the 18th century and the subsequent development of physical therapy in the early and mid-19th century in various Northern and Western European countries, including Sweden, Germany, and the Netherlands (Ottoson, 2005; Terlouw, 2007).

Over time, however, and perhaps related to the limited number of physical therapists available, limited societal resources were allotted to fund physical therapy services. At the time, greater societal recognition was for those working and with the sick and disabled, and the emphasis shifted from therapists also providing wellness, preventative, and maintenance services to the profession of physical therapy almost exclusively associated with restorative services. Physical therapy came to be synonymous with treatment to address impairments and associated limitations in activities and restrictions in participation resulting from congenital, degenerative, trauma-related, post-surgical, disease-related, and other causes.
In the first half of the 20th century, increasing standards of living, especially in the developed world, led to a resurging recognition of the importance of wellness and fitness with regard to health and well-being. This demand for services related to enhancing and restoring wellness and fitness was initially filled by alternative healthcare providers working from unsubstantiated and often implausible underlying theoretical models (Whorton, 1988). However, the recognition of the role of wellness and fitness again increasingly gained ground in mainstream medicine as reflected in the World Health Organization view of health as a triad of physical, mental, and social well-being. Health was thus defined as not merely the absence of disease but rather as a state of complete physical, mental, and social well-being (WHO, 1947).

Undoubtedly driven by more down-to-earth motives of seeking alternate avenues of generating revenue in the face of diminishing reimbursement for restorative physical therapy services, and also by more lofty motives related to a recognition of the importance of wellness in attaining optimal results when providing restorative services and in the growing understanding of the crucial and natural leadership role physical therapy has in promoting health and well-being in individuals and society as a whole, therapists are once again increasingly engaging in providing wellness services outside and within the traditional restorative service model. In fact, A Normative Model of Physical Therapist Professional Education (CAPTE, 2004) has required entry-level physical therapy students to be educated in wellness since 2004. The 2004 edition further elaborated on requirements with regard to wellness in the physical therapy entry-level curriculum (CAPTE, 2004).

The American Physical Therapy Association, in The Guide to Physical Therapist Practice, has also included a discussion of wellness, defining wellness as the “concepts that embrace positive health behaviors that promote a state of physical and mental balance and fitness” (APTA, 2001b).

When comparing the World Health Organization definition with the definition proposed in The Guide to Physical Therapist Practice above, it becomes evident that the latter definition overtly excludes the social realm of the wellness triad. Dr. Sharon Fair is eminently qualified with degrees in physical therapy, exercise science, psychology, and education. She has professional experience as a personal trainer, physical therapist, and educator, and has a body of publications including a doctoral dissertation on the topic of wellness and physical therapy. In this book she proposes and constructs a comprehensive approach to wellness in physical therapy based on her more inclusive definition of wellness as a lifestyle that promotes physical, mental, and social health in the cognitive, psychomotor, and affective domains, both internally and externally (Fair, 2002b).

Following the five-element approach to patient management discussed in The Guide to Physical Therapist Practice, Dr. Fair discusses examination, evaluation, diagnosis, prognosis and plan of care, and interventions in the context of nutritional wellness, fitness wellness, body composition wellness, and mental and social wellness. Examination sections include sufficient detail for immediate clinical application discussion of screening, history, and tests and measures. The author introduces both validated history and
physical examination items and tools developed as part of her original research and doctoral work in the area of wellness. All information is supported by up-to-date and relevant references from the peer-reviewed literature. Didactic elements in each chapter include learning objectives and definitions of basic terms and concepts. The author also makes the link to ICD codes and Preferred Practice Patterns discussed in *The Guide to Physical Therapist Practice*. Data on the “typical client” and athlete allow for comparison of findings to normative data. An eight-step community wellness project and an in-depth wellness case example will help the reader to apply the concepts introduced in the text.

In this book, Dr. Fair provides readers with the information on knowledge and skills that will allow physical therapists to truly align with the portion of the APTA Vision Statement for Physical Therapy 2020 that proposes physical therapists as the practitioners of choice in the area of wellness. Her comprehensive and at times passionate discussion of the topic is certain to appeal to both entry-level physical therapy students and experienced clinicians.

*Peter A. Huijbregts, PT, MSc, MHSc, DPT, OCS, FAAOMPT, FCAMT*
Series Editor, Contemporary Issues in Physical Therapy and Rehabilitation Medicine
Victoria, British Columbia, Canada