Medical Terminology Basics
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Academic books on medical terminology began to appear in the United States in the late 1950s and early 1960s. At that time, most authors were professors teaching medical terminology courses to college students in a health field. Many of us respect their creativity, dedication, and decision to publish college textbooks in this relatively new discipline in the United States. They received little guidance from other textbooks on medical terminology and relied more on personal experience gained from clinical settings and teaching in a health field.

Over the last 50 years, medical terminology has evolved into a required course for most careers in the allied health fields, such as nursing, physical therapy, and clinical laboratory service. With millions of students enrolled in medical terminology courses, the number of available college textbooks has risen into the hundreds, including both print and electronic media.

The traditional and basic design of the contents of a medical terminology book varies according to the extent of coverage, course units, didactic approaches, student competency, and many other considerations. The contents in Medical Terminology Basics: Programmed Instruction are based on a didactic approach using programmed instruction and are designed to achieve these goals:

1. Successful learning of the basics of medical terminology by repetitive processes
2. Obligatory, but minimal, supervision by an instructor
3. Flexibility for both instructors and students: supervision, self-regulated progress, and time portioned for a step-by-step teaching and learning approach
4. Fulfillment of academic requirements for a course on the basics of medical terminology

The introduction of this book provides further details about these four goals. There are only a few medical terminology books that use programmed instruction because its acceptance as a classroom text is dependent on two important academic considerations: 1) curriculum requirements and 2) the unique profile or needs of students. You, as instructors and students, will determine if this book has fulfilled your expectations in teaching and learning objectives.

With the advance of the Internet, Medical Terminology Basics: Programmed Instruction makes full use of the resource powers of the electronic medium to accomplish the goals of the printed product. Supplements are available for students and
instructors, including interactive websites and downloadable resources. Visit http://healthprofessions.jbpub.com/medtermbasics/preview for more information about the extensive online supplements available with this text.

I hope that this book and the accompanying electronic resources will serve all of your needs. I welcome comments on the general and specific approaches of this book and its websites as well as reports of any errors.

—Y.H. Hui
I am grateful to one special colleague, among others, for the completion of Medical Terminology Basics: Programmed Instruction—my long-time partner in writing and publishing, Peggy Stanfield. In 1993, we completed a 900-page manuscript on programmed instruction in medical terminology. For reasons beyond our control, the project was never published. In 2001, she gave me permission to select, use, revise, and update parts of the manuscript in order to prepare a smaller book on medical terminology using the same didactic approaches. It took nearly 10 years for me to complete this new project. Without her assistance—and blessing—it is unlikely that Medical Terminology Basics: Programmed Instruction would have been published.

We all know how hard it is to prepare the manuscript for a technical book. Actually, the production of both a book and its accompanying websites poses equal difficulty, though the challenges are of a different type. Many people were involved in the production of this book and its websites. I have been fortunate to have a number of committed people from Jones and Bartlett lend their support and expertise to the finished product. You are the best judge of the quality of their work.
Pronunciations

For many of us, pronouncing a medical word is difficult. In learning medical terminology, the process is easier if we learn to pronounce the words at the same time we learn their meanings. Traditionally, the pronunciation of any word in the English language is governed by phonetics, rules, and symbols, as outlined in reliable dictionaries for various disciplines. Unfortunately, each reference source carries its own set of symbols to represent various sounds as determined by the author or the publisher in any discipline, medical or otherwise. This is especially true when a source uses symbols of various origins, such as Greek, Latin, mathematical, chemical, and so on. The macron (ā) and breve (ă) diacritical marks are very common. Authors, editors, and publishers of medical terminology are very careful in choosing their pronunciation symbols when the intended users of a book are undergraduate students, especially freshmen or sophomores. Depending on the target audience, books on medical terminology implement one of the following pronunciation systems:

1. Traditional phonetics in the English language with rules and symbols
2. Traditional phonetics in the English language with rules and no symbols
3. Applicable phonetics using simple rules only
4. A combination of the above approaches

This book uses Option 2 with selected application of Option 4. In general, pronunciation is indicated by a simple phonetic spelling with no diacritical markings, as indicated below.

1. The primary accent is indicated by an underline, e.g., cerebellum (seh^-reh-bel-um).
2. The secondary accent is indicated by (’), e.g., cerebellum (seh’-reh-bel-um).
3. When an unmarked vowel ends a syllable, it is long, e.g., immune (i-mun’).
4. When a syllable ends with a consonant, its unmarked vowel is short, e.g., cranial (kra-ne-al).

To give you a frame of reference, the following list shows how diacritical markings or symbols can be used in addition to the four simple phonetic rules above to indicate the pronunciation of a medical term.
1. A long vowel sound is indicated by a macron (¯), as in the examples below:
   a. urease (u-re-ās); abate (ah-bāt)
   e. lead (lēd); scabies (ska-bēz)
   i. askaracide (as-kar-ah-sīd); bile (bīl)
   o. ohms (ōmz); hormone (hor-mōn)
   u. ampule (am-pūl); femur (fe-mūr)
   oo. oophoron (oo-for-on)

2. A short vowel that is the syllable or that ends the syllable is indicated by a breve (˘):
   a. apophysis (ă-pof-i-sis)
   e. edema (ĕ-dēm-ah); effusion (ĕ-fūs-ion)
   i. immunity (ı˘-mu˘n-i-te’); oxidation (oks’-si-da-shun)
   o. otic (ŏ-tic); official (ŏ-fish-al)
   u. avoirdupois (av-er-du-poiz)
   oo. book (bo˘ok)

Coverage and Goals

How much information is covered in any college medical terminology book depends on many factors, such as:

1. Whether the book is intended to be used as reference or as an undergraduate text
2. Competency of targeted users
3. Length of the college course
4. Depth and breadth of information
5. Didactic approaches

*Medical Terminology Basics: Programmed Instruction* is designed for an introductory course on basic medical terminology and for students and instructors who prefer a book with some flexibility in the teaching and learning process. It is not intended to be comprehensive.

This book features a repetitive learning process, which means that each medical term and its components are repeated at least twice (and sometimes more) in each chapter. The number of terms that can be included in this book is consequently limited by such an approach. The aspects of basic physiology and anatomy are explained when applicable to a particular medical term, but it is expected that the student will rely on other resources for more detail. The medical terms related to the most common body systems are presented, since it is impossible and impractical to cover all aspects of the human body systems.

The basic goals of this book are:

1. The student will learn the most basic medical terms in order to form a foundation for education or training in an allied health field.
2. The student will achieve this goal in the shortest or minimum possible time required by the educational curriculum and course credits.
3. The student can achieve this goal in or outside a classroom, assuming proper supervision is exercised.

**Student Activities**

Beginning with Chapter 3, students learn medical terms in *Medical Terminology Basics: Programmed Instruction* by using three basic approaches:

1. The first part of each chapter provides programmed instructions. If students complete this part as directed, they will learn the basic medical terms covered in the chapter.

2. The second part of each chapter provides a Progress Check that reinforces the terms the student learned in the first part of the chapter.


**Supplemental Tools**

Each chapter profiles two boxes of supplemental information. As these supplemental tools are not discussed within the blocks, the boxes will not be cited or referred to in the text.

Students taking this course are either enrolled in a college health program or interested in doing so. One box in each chapter provides a short description of several careers in the health professions. The goal of these boxes is to assist students in making educated decisions about their future career ambitions.

The second box in each chapter provides a short list of abbreviations that are important in the medical field. The abbreviations are tested in the Progress Check for each chapter. The best way for students to learn medical abbreviations is, of course, in a clinical setting; students will have a chance to do so when they work in the medical field.

**Premises**

The students should be aware of the following premises when using this or any other medical terminology college textbook:

1. **Terms coverage.** There are hundreds of thousands of medical terms in the health field, as illustrated by available dictionaries, some of which contain as many as 5000 printed pages. Frequently, some terms are present in some texts but not in others.

2. **Word parts.** The technique in each book is to teach students the basic components of each medical term so they will know how to develop medical terms from such components. This presents two challenges. First, many medical terms cannot be developed because they do not comply with the rules governing word components. Second, some medical terms do not have components; they are simply medical terms by themselves and cannot be built from standard components taught in available textbooks.
3. Pronunciations. Most textbooks try to be consistent when they present the phonetic spellings of medical terms. No two books use the same system of phonetic spelling.

Students can best obtain clarifications from their instructors. Using Internet search engines is currently the preferred method of learning and ascertaining more details about specific medical terms.

Learning and Teaching Resources on the Website

This book has a website that provides additional learning and teaching resources for students and instructors. Visit http://healthprofessions.jbpub.com/medtermbasics/preview for more information.