

CHAPTER 1 – FUNDAMENTAL WORD STRUCTURE

OBJECTIVES

On completion of this chapter, you will be able to:

- Describe the fundamental elements that are used to build medical words.
- List three guidelines that will assist you with the identification and spelling of medical words.
- Explain the use of abbreviations when writing and documenting data.
- Analyze, build, spell, and pronounce medical words.
- Identify and define selected abbreviations.
- Describe selected medical and surgical specialties, giving the scope of practice and the physician's title.
- Complete the Study and Review section.

OUTLINE

I. Comprehension of Fundamental Word Structure

Medical Terminology is the study of terms that are used in the art and science of medicine. Medical language has a strong Greek and Latin influence.

A. Fundamentals of Word Structure – the fundamental elements in medical terminology are the component parts used to build medical words. The component parts and abbreviations are **P** for **prefix**, **R** for **root**, **CF** for **combining form**, and **S** for **suffix**. These component parts are arranged in each chapter according to body system or specialty area.

1. **Prefix** – means to *fix before* or *to fix to* the beginning of a word. A prefix is a syllable or a group of syllables placed at the beginning of a word to alter or modify the meaning of the word or to create a new word. Use examples to demonstrate.
2. **Word Root** – a word or word element from which other words are formed. It is the foundation of the word and conveys the central meaning of the word. Use examples to demonstrate.
3. **Combining Form** – a word root to which a vowel (**a, e, i, o, or u**) has been added to join the root to a second root or to a suffix. The vowel *o* is the most common vowel used to make combining forms. They are found at the beginning of a word or within a word. Use examples to demonstrate.
4. **Suffix** – means to *fasten on*, *beneath*, or *under*. May be a syllable or group of syllables united or placed at the end of a word to alter or modify the meaning of the word or to create a new word. Use examples to demonstrate.

B. Principles of Component Parts – most of the terms for the body's organs originate from **Latin** words, whereas terms describing diseases that affect

these organs have their origins in **Greek**. Many prefixes and suffixes have more than a single definition so one must learn to use the definition that best describes the term. Give examples to demonstrate.

- C. Identification of Medical Words** – learn to distinguish between and select the appropriate component parts for the meaning of words.
- D. Spelling** – Medical words of Greek origin are often difficult to spell because many begin with a silent letter or have a silent letter within the word. Spelling of all medical words is extremely important because the addition or omission of a single letter may change the meaning of the word. Give examples to illustrate this concept to include the prefixes and suffixes that are frequently misspelled:

1. Prefix	Meaning
ante-	before, forward
anti-	against
ecto-	out, outside, outer
endo-	within, inner
hyper-	above, excessive, beyond
hypo-	below, under, deficient
inter-	between
intra-	within
para-	beside, alongside, abnormal
peri-	around
per-	through
pre-	before, in front of
pro-	before
super-	above, beyond
supra-	above, beyond
2. Suffix	Meaning
-poiesis	formation
-ptosis	prolapse, drooping, sagging, falling down
-ptysis	spitting
-rrhagia	to burst forth, bursting forth
-rrhage	to burst forth, bursting forth
-rrhaphy	suture
-rrhea	flow, discharge
-rrhexis	rupture
-scope	instrument for examining
-scopy	visual examination, to view, examine
-tome	instrument to cut
-tomy	incision
-tripsy	crushing
-trophy	nourishment, development

The following guidelines are provided to help with the building and spelling of medical words:

1. If the suffix begins with a vowel, drop the combining vowel from the combining form and add the suffix. For example: gastr/o (stomach) + -oma (tumor) becomes gastroma when we drop the *o* from gastro.
2. If the suffix begins with a consonant, keep the combining vowel and add the suffix to the combining form. For example: lip/o (fat) + -lysis (destruction) becomes lipolysis and we keep the *o* on the combining form lipo.
3. Keep the combining vowel between two or more roots in a term. For example: electro (electricity) + cardio (heart) + -gram (record) becomes electrocardiogram and we keep the two combining vowels.

E. Formation of Plural Endings – to change singular endings to plural endings, substitute the plural endings as follows:

Singular Ending	Plural Ending
a as in bursa	to ae as in bursae
ax as in thorax	to aces as in thoraces or es as in thoraxes
en as in foramen	to ina as in foramina
is as in crisis	to es as in crises
is as in iris	to ides as in irides
is as in femoris	to a as in femora
ix as in appendix	to ices as in appendices
nx as in phalanx	to ges as in phalanges
on as in spermatozoon	to a as in spermatozoa
um as in ovum	to a as in ova
us as in nucleus	to i as in nucle <i>i</i>
y as in artery	to i and add es as in arteries

F. Use of Abbreviations – an **abbreviation** is a process of shortening a word or phrase into appropriate letters. Abbreviations are used as a form of communication in writing and documentation. Many abbreviations have more than one meaning, so caution should be exercised when using them. The Institute for Safe Medication Practice (ISMP) and the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) have developed a list of abbreviations considered dangerous because of the potential for misinterpretation. It is recommended that facilities using abbreviations for documentation keep a list of approved and unapproved abbreviations on hand and readily available. The list is located at <http://www.ismp.org> and <http://www.jointcommission.org>.

G. Pronunciation – the text uses a phonetically spelled pronunciation guide adapted from *Taber's Cyclopedic Medical Dictionary*. Words should be practiced aloud when working with various lists of medical terms or

vocabulary words. Accent marks are used to indicate stress on certain syllables as noted in the following:

1. A single accent mark (ˈ) is called a **primary accent**. It is used with a syllable that has the strongest stress.
2. A double accent mark (ˈˈ) is called a **secondary accent** and is given to syllables that are stressed less than primary syllables.
3. **Diacritics** are marks placed over or under vowels to indicate the long or short sound of the vowel.
 - a. **Macron** (¯) – the long sound of the vowel
 - b. **Breve** (˘) – the short sound of the vowel
 - c. **Schwa** (ə) – indicates the uncolored, central vowel sound of most unstressed syllables.

II. Building Your Medical Vocabulary

A. **Medical Words and Definitions** – this section provides the foundation for learning medical terminology. Medical words can be made up of four types of word parts:

1. **Prefix (P)**
2. **Root (R)**
3. **Combining Forms (CF)**
4. **Suffixes (S)**

By connecting various word parts in an organized sequence, thousands of words can be built and learned. In the text, the word list is alphabetized so one can see the variety of meanings created when common prefixes and suffixes are repeatedly applied to certain word roots and/or combining forms. Words shown in *pink* are additional words related to the content of this chapter that have not been divided into word parts. Definitions identified with an *asterisk icon* (*) indicate terms that are covered in the Pathology Spotlights section of the chapter.

III. Abbreviations (p. 10)

IV. **Medical and Surgical Specialties** – the practice of medicine involves many areas of specialization as established by the American Board of Medical Specialties (ABMS). These specialties are found in **Table 1–1: Selected Medical and Surgical Specialties** and **Table 1–2: Types of Surgical Specialties with Description of Practice** on **pp. 11–12**.

V. **Study and Review (pp. 13–16)**