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English Medical Terminology

医学英语词汇学

■ 主 审 白永权

■ 主 编 朱 元 李 莹

中国出版集团



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Preface

After thousands of years of development in medicine, a massive medical terminology system has been built up. The size of medical vocabulary is the biggest in all scientific fields which can be proven from the mere fact that a medium-sized medical dictionary would easily contain more than 100,000 terms. How to comprehend and use such terms is a gigantic problem facing the biomedical and health-related researchers and professionals.

It is never easy to understand and remember the massive medical terminology. Fortunately medical terms share some distinctive features that make these terms both comprehensible and expressive. Most terms are derived from ancient Greek and Latin, and can be divided into smaller word parts such as prefixes, suffixes, roots and combining vowels. Recognizing such word parts is key to understanding medical terminology.

This book is intended to help medical students to master medical terminology in a quick and easy way. The book explains and illustrates more than 800 medical word parts which give rise to tens of thousands of medical terms. Through the explanation of the word parts and the exercises, readers can discover the features and rules of medical word formation and can both increase the size of their medical vocabulary and develop the ability to analyze the new terms they have never met before.

The book contains 15 chapters. The first three chapters introduce the general rules of medical word formation, pronunciation, prefixes and suffixes. The rest twelve chapters explain the word parts related to body structures and body systems. Each chapter begins with an introduction of general medical knowledge and is followed by the explanation of word parts. The word parts in each chapter are organized into different groups ranging from surgical procedures to pathological conditions. Following every group of word parts are exercises. When all the word parts of each chapter are explained, integrated exercises are provided to consolidate what readers have learnt. At the end of each chapter, we also provide the explanations for pathological conditions and diseases related to each chapter so that the readers could also gain some medical knowledge while studying this book.

This book is compiled for undergraduate and postgraduate students in medical schools and universities. Also the book could be helpful to health practitioners who want to increase

their medical vocabulary. Meanwhile, to facilitate the oversea medical students learning Chinese, we added Chinese explanations and Pinyin to each word part.

We are grateful to many who assisted in the preparation of this book, particularly the support from Project 985. Without this precious knowledge, time and support, this book could not be published.

Editors

2013 - 6

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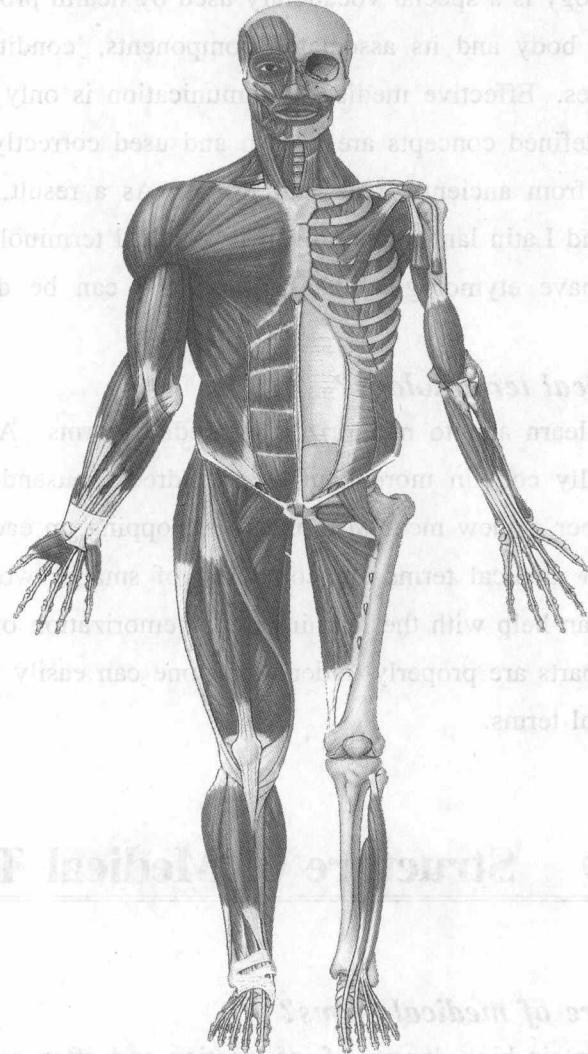
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Chapter 1 General Introduction



Part One Overview of Medical Terminology

What is medical terminology?

Medical terminology is a special vocabulary used by health professionals for accurately describing the human body and its associated components, conditions (both healthy and diseased) and processes. Effective medical communication is only possible if the medical terms and their well defined concepts are known and used correctly. The western medical knowledge originated from ancient Greek and Rome. As a result, words and word parts derived from Greek and Latin languages prevail in medical terminology. This explains why most medical terms have etymological background and can be divided into meaningful component parts.

How to study medical terminology?

It is not easy to learn and to memorize the medical terms. A medium-sized medical dictionary would usually contain more than one hundred thousand medical terms, not to mention the vast number of new medical terms keep popping up each year.

Fortunately, most medical terms are composed of smaller word parts, and there are certain methods that can help with the learning and memorization of the terms. As long as the meaningful word parts are properly understood, one can easily figure out the meanings of the complex medical terms.

Part Two Structure of Medical Terms

What's the structure of medical terms?

Medical terms contain high density of information and often condense an entire phrase into a single word through the combination of meaningful word parts. These word parts may include one or more of the following: **roots, prefixes, suffixes, combining vowels.**

Familiarity with these word parts will help clarify the meaning of the terms. Take the word “*polyneuritis*” for example. The word is composed of a prefix *poly-*, a root *neur/*, and a suffix *-itis*. To figure out what this word means, all one needs to do is to identify the meanings of these three word parts.

The **root** is the fundamental unit of each medical term and comprises the primary meaning of a term. Unlike general English words in which roots can usually stand alone, most roots in medical terms are combined with other parts. A slash(/) is used to indicate the root, and in the above example, the root *neur/* means *nerve*.

The **suffix** is the word ending that follows a root. The suffix usually modifies the meaning of the root or indicates its grammatical function. In this book, suffixes are indicated by a hyphen(-) in the front. The meaning of *-itis* is *inflammation*.

The **prefix** is the word part added before a root. The prefix can also modify the meaning of the root and is followed by a hyphen. The meaning of *poly* - is *many*.

Generally speaking, the interpretation of most medical terms begins from the suffix and then goes to the beginning and the rest of the term. Hence, the explanation of *polyneuritis* is *the inflammation of many nerves*.

What’s the combining form?

To make a medical term easier to pronounce, a **combining vowel** is often used to link the root and the suffix or to link the two roots. The letter *o* is the most commonly used combining vowel. Occasionally, *i* can also serve as the combining vowel, as in the word *centimeter*.

Combining form refers to the root joined with a combining vowel. The combining form for *nerve* is *neur/o*. The term *neurology* is composed of a combining form *neur/o* and a suffix *-logy* (meaning *the study of*).

Note that the combining vowel is omitted if the suffix itself begins with a vowel. In the term *neur/algia*, the suffix *-algia* (meaning *pain*) begins with a vowel, so the combining vowel *o* is taken away. Remember, only the combining vowel is taken away, not the vowel in the root. Hence, the combining form of bone is *oste/o*, and the inflammation of the bone is *osteitis*. (Note how the combining vowel *o* is omitted, while the vowel *e*, which is part of the root, is maintained.)

The omitting of the combining vowel only applies when the combining form joins with

a suffix. When two combining forms join together, however, the combining vowel shall be maintained even when the second one begins with a vowel. Such as *gastroenterology*, which contains two combining forms *gastr/o* (meaning *stomach*) and *enter/o* (meaning *intestine*) and one suffix *-logy*. Its meaning is *the study of stomach and intestine*. (Notice how we drop the *o* in *gastr/o* when we join it with a suffix beginning with a vowel, as in *gastritis* and how we retain the *o* when we join it with another combining form which also begins with a vowel, as in *gastroenterology*.)

Exercise 1

Fill in the blanks with the terms you have learned in the above passage.

1. The foundation of a term is called _____.
2. The _____ is the word ending that modifies the meaning of the term or indicates its grammatical function.
3. The _____ is the word element added to the beginning of a term.
4. The letter that links a suffix to a root, or a root to another root is called _____.
5. A combining form is a _____ with a/an _____ attached.

Exercise 2

Decide whether each of the following statements is true (T) or false (F).

1. "O" is the only combining vowel used in medical terms. _____
2. Definition of medical terms usually begins with defining the suffix first, the prefix second, and the root(s) last. _____
3. When a suffix beginning with a vowel is attached to a combining form, both the combining vowel and the vowel in the suffix are omitted. _____
4. When two combining forms join together, the combining vowel of the first one is omitted if the second one begins with a vowel. _____

Part Three Pronunciation of Medical Terms

Stress

Most medical terms contain many syllables (*multisyllabic*) and are, thus, quite long. Generally speaking, for multisyllabic vocabulary, the stress falls on either the second to the last syllable or the third to the last syllable.

The stress is placed on the second to the last syllable with words ending in “ic”, “ia”, “sion” or “tion”.

e. g.

stATIC	ViSion
cePHALic	inCIision
neuRALgia	soLUtion
dysPLAgia	opeRAtion

The stress is placed on the third to the last syllable with words ending in “cy”, “ty”, “gy”, “ous” or “al”.

e. g.

conSistency	spontANious
rhinoPLasty	uREthral
psyCHology	diffeRential

There are always exceptions to the above rules. However, when pronouncing medical terminology, you won't be wrong too far if you place the stress somewhere around the combining vowel, or, if the combining vowel is omitted, on the initial vowel of the suffix.

e. g.

cardiOlogy	arthRItis
encephaLOpathy	neuROma
duodeNOstomy	aNEmia
heMOlysis	

Sound omission

For certain letter combinations, when they appear at the beginning of a term, their first letter is not pronounced; when they appear in other positions, the first letter has the usual pronunciation. For example,

❖ Initial *gn* has the “n” sound as in *gnathitis* (næ'thɑ:ɪtɪs); elsewhere, it is pronounced as in *prognosis* (prɒɡ'nɒʊsɪs).

❖ Initial *mn* has the “n” sound as in *mnemonic* (nɪ'mnɒnɪk); elsewhere, it is pronounced as in *insomnia* (ɪn'sɒmniə).

❖ Initial *pt* has the “t” sound as in *ptosis* ('tɒʊsɪs); elsewhere, it is pronounced as in *September* (sep'tembər).

❖ Initial *pn* has the “n” sound as in *pneumonia* (nju:'mɒniə); elsewhere, it is pronounced as in *hypnosis* (hɪp'nɒʊsɪs).

❖ Initial *ps* has the “s” sound as in *psychology* (saɪ'kɒlədʒɪ); elsewhere, it is pronounced as in *hips* (hips).

Confusing sounds

Some consonants that might lead to confusion in pronunciation include:

❖ *c* before *a*, *o*, *u* and at the final position of a term has the “k” sound, as in *cardiac* ('kɑ:dɪæk).

❖ *c* before *e* or *i* has the “s” sound, as in *thoracic* (θɒ'ræɪsɪk).

❖ *g* before *a*, *o*, *u* has the “g” sound, as in *gonad* ('ɡɒnæd).

❖ *g* before *e* or *i* has the “j” sound, as in *gingivitis* (ɪdʒɪndʒɪ'vaɪtɪs).

❖ Initial *x* has the “z” sound, as in *xerodermia* (zɪərə'dɛmɪə); elsewhere, it sounds like *x* in *wax* (wæks).

❖ *ph* has the “f” sound, as in *phrenic* ('frɛnɪk).

❖ *ch* has the “k” sound, as in *chronic* ('krɒnɪk).

❖ The combination *rh* and *rrh* has the “r” sound, as *diarrhea* (daɪə'riə), and *rhinitis* (raɪ'nɪtɪs).

Exercise 3

Pronounce the following terms. Pay attention to the underlined letter(s).

- | | |
|-------------------------|------------------------|
| 1. <u>ch</u> ord | 6. <u>ps</u> ychiatry |
| 2. <u>x</u> enophobia | 7. <u>ph</u> armacy |
| 3. lary <u>n</u> geal | 8. <u>r</u> heumatic |
| 4. laryng <u>o</u> tomy | 9. <u>gn</u> athic |
| 5. thora <u>c</u> ic | 10. <u>g</u> astralgia |

Part Four **Spelling of Medical Terms**

Alternative spellings

The spellings of diphthongs (double vowel) are often different in British and American English. In British English, the unpronounced vowel tends to be retained in spelling, whereas in American English, the word is recorded as it sounds. In this book, the American spelling system is adopted. Here is the list of the alternative spellings.

Alternative spelling	British	American
<i>ae for e</i>	aetiology faeces haematology	etiology feces hematology
<i>oe for e</i>	oedema diarrhoea coeliac	edema diarrhea celiac
<i>our for or</i>	tumour	tumor
<i>re for er</i>	fibre	fiber

Confusing spellings

Be careful of the terms with confusing spellings. Some medical terms have similar

