



供医学留学生、研究生和七、八年制学生教学使用

医学英语词汇学

English Medical Terminology

第2版

- 主审 白永权
- 主编 朱元 李莹

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Preface to the Second Edition

Two years after the publication of *English Medical Terminology* (first edition), we are glad to see that the book has served as a useful instrument for many students and instructors of medical English. This book is intended to provide medical students with an efficient and hand-on experience of medical terminology learning. For this purpose, we have selected 664 combining forms, prefixes and suffixes which are used at high frequency in composing English medical vocabulary. Also, over 1200 medical terms (anatomical, clinical and pharmaceutical) are presented in the order of body systems to illustrate the formation rule of medical terms and to cultivate a command of core medical terms among users. In addition, descriptions about each body system are provided in a plain and nontechnical manner to promote contextualized vocabulary learning. A variety of exercises are designed to keep our users active and alert when they use the book.

In the new edition, we have added a glossary of all the medical terms that are included in the book, together with their phonetic symbols and Chinese equivalents for our user's reference. To help students locate the word elements in each chapter, we added index to all prefixes, suffixes and combining forms at the back of the book. Also, Pinyin (which was designed in the first edition for the sake of overseas students studying medicine in China) has been removed since the book now enjoys wider readership among Chinese medical students.

We have made every effort to provide accurate information. However, there is no guarantee that the book will be free of errors. Hence, we are grateful for any feedback and suggestions for further improvement. Last but not least, we would like to extend our sincere gratitude to the editor Wang Menghua and all our users for their valuable suggestions and comments that have made this new edition possible.

Zhu Yuan

Li Ying

Feb. 20, 2016

Preface to the First Edition

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 nearly 700 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

Jun. 23, 2013

Contents

Chapter 1 **General Introduction**

Part One	Overview of Medical Terminology	2
Part Two	Structure of a Medical Term	2
Part Three	Pronunciation of Medical Terms	5
Part Four	Spelling of Medical Terms	7
Part Five	Integrated Practice	8

Chapter 2 **Suffixes**

Part One	Introduction	10
Part Two	Combining Forms and Suffixes	11
Part Three	Integrated Practice	21
Part Four	Supplementary Readings	22
Part Five	Review Sheet	24

Chapter 3 **Prefixes**

Part One	Introduction	26
Part Two	Combining Forms and Prefixes	27
Part Three	Integrated Practice	40
Part Four	Supplementary Readings	42
Part Five	Review Sheet	43

Chapter 4 **Body Structure & Directional Terms**

Part One	Basic Body Structures & Directional Terms	47
Part Two	Combining Forms, Prefixes and Suffixes	49
Part Three	Integrated Practice	56
Part Four	Supplementary Readings	57
Part Five	Review Sheet	58

Chapter 5 Respiratory System

Part One	Overview of the System	61
Part Two	Combining Forms, Prefixes and Suffixes	63
Part Three	Integrated Practice	72
Part Four	Supplementary Readings	74
Part Five	Review Sheet	76

Chapter 6 Digestive System

Part One	Overview of the System	79
Part Two	Combining Forms, Prefixes and Suffixes	81
Part Three	Integrated Practice	94
Part Four	Supplementary Readings	95
Part Five	Review Sheet	97

Chapter 7 Cardiovascular System

Part One	Overview of the System	100
Part Two	Combining Forms, Prefixes and Suffixes	102
Part Three	Integrated Practice	112
Part Four	Supplementary Readings	113
Part Five	Review Sheet	115

Chapter 8 Lymphatic System and Immunity

Part One	Overview of the System	118
Part Two	Combining Forms, Prefixes and Suffixes	119
Part Three	Integrated Practice	128
Part Four	Supplementary Readings	130
Part Five	Review Sheet	131

Chapter 9 Nervous System

Part One	Overview of the System	134
----------	------------------------------	-----

Part Two	Combining Forms, Prefixes and Suffixes	136
Part Three	Integrated Practice	145
Part Four	Supplementary Readings	148
Part Five	Review Sheet	150

Chapter 10 Endocrine System

Part One	Overview of the System	153
Part Two	Combining Forms, Prefixes and Suffixes	155
Part Three	Integrated Practice	164
Part Four	Supplementary Readings	165
Part Five	Review Sheet	167

Chapter 11 Urinary System

Part One	Overview of the System	170
Part Two	Combining Forms, Prefixes and Suffixes	171
Part Three	Integrated Practice	180
Part Four	Supplementary Readings	182
Part Five	Review Sheet	184

Chapter 12 Reproductive System

Part One	Overview of the System	187
Part Two	Combining Forms, Prefixes and Suffixes	189
Part Three	Integrated Practice	201
Part Four	Supplementary Readings	201
Part Five	Review Sheet	204

Chapter 13 Musculoskeletal System

Part One	Overview of the System	207
Part Two	Combining Forms, Prefixes and Suffixes	209
Part Three	Integrated Practice	222
Part Four	Supplementary Readings	223

Part Five	Review Sheet	226
-----------	--------------------	-----

Chapter 14 Integumentary System

Part One	Overview of the System	229
Part Two	Combining Forms, Prefixes and Suffixes	230
Part Three	Integrated Practice	237
Part Four	Supplementary Readings	238
Part Five	Review Sheet	239

Chapter 15 Special Senses: The Eye and The Ear

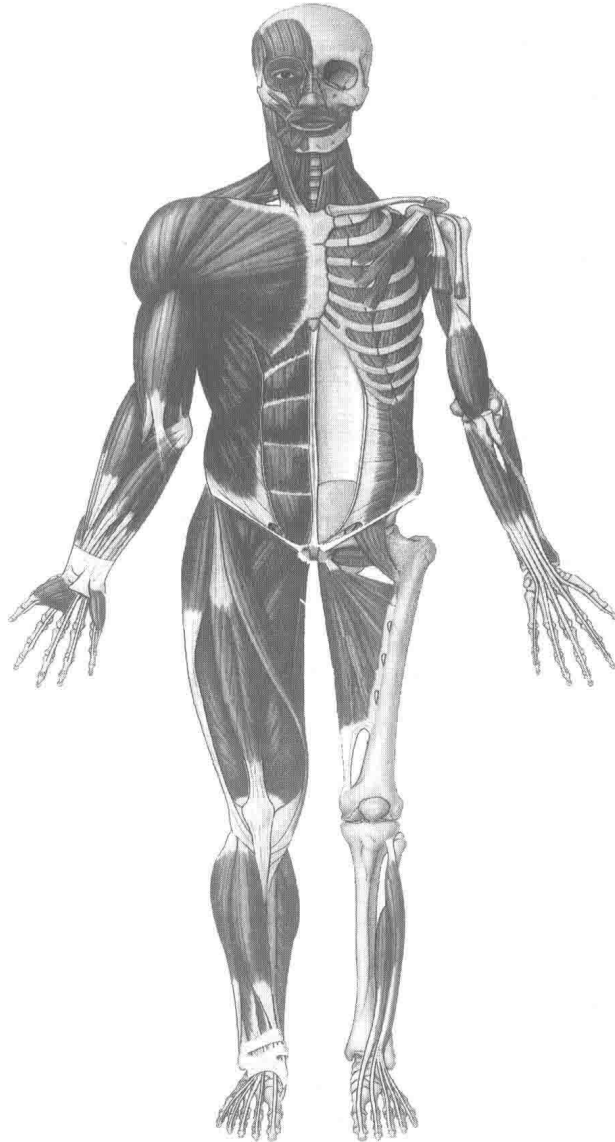
Part One	Overview of the System	242
Part Two	Combining Forms, Prefixes and Suffixes	244
Part Three	Integrated Practice	253
Part Four	Supplementary Readings	256
Part Five	Review Sheet	257

Appendix 1	Glossary	259
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Appendix 2	Medical Word Elements and Their Meanings	300
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Appendix 3	Keys to Exercises in Integrated Practice	311
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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. It is estimated that over seventy five percent of medical terms are based either on Greek or Latin, which explains why most medical terms have etymological background and can be divided into meaningful component parts.

How to study medical terminology?

It is a daunting task trying to memorize tens of thousands of medical terms. Fortunately, most medical terms can be decomposed into smaller word parts, and the learning and memorization of the terms can easily be achieved through breaking them into component parts. 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 Term**

What's the structure of medical terms?

Medical terms contain high density of information and often squeeze an entire phrase into a single word through the combination of meaningful word parts. These word parts include: **roots**, **prefixes**, **suffixes**, **combining vowels** and **combining forms**. Familiarity with these word parts is essential in the understanding of medical 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 forms the primary meaning of the term. Unlike general English words in which roots can usually stand alone, most roots in medical terms need to be 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 the suffix *-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*.

The understanding of a medical term usually starts from the suffix. Once the suffix is identified, you can then move back to the beginning and finish the rest of the term. Hence, the explanation of *polyneuritis* is “the inflammation (*-itis*) of many (*poly-*) nerves (*neur/*).

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*.

The **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*).

The combining vowel is not always present in medical terms. It is omitted if the suffix itself begins with a vowel. In the term *neuritis*, the combining vowel is taken away because the suffix *-itis* (meaning *inflammation*) begins with a vowel.

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 if the second one begins with a vowel. Look at *gastroenterology*, the term contains two combining forms *gastr/o* (meaning *stomach*) and *enter/o* (meaning *intestine*)

and one suffix *-logy*. Notice how we retain the *o* in *gastr/o* when we join it with another combining form that also begins with a vowel. Also, based on what you have learned above, you can probably figure out that the meaning of *gastroenterology* is *the study of stomach and intestine*.

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
dysPLASia	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
sensiBIlity	CORTical
psyCHOLogy	CERvical

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'thaɪtɪs); elsewhere, it is pronounced as in *prognosis* (prɒɡ'nɒʊsɪs).

❖ Initial *mn* has the “n” sound as in *mnemonic* (nɪ'mɒnɪk); 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* (njʊ:'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* (θɔ:'reɪsɪk).

❖ *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* (ɪdʒɪndʒə'vaɪtɪs).

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

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

❖ *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'naitɪs).

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>ga</u> stralgia |

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

Confusing spellings

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