

卫·生·部·规·划·教·材

全国高等医药院校教材·供临床、预防、基础、口腔、药学、护理等专业用

医学 专业英语

MEDICAL ENGLISH

阅读一分册

READING I

总主编·白永权

主 编·邱望生

 人民卫生出版社

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前 言



《医学专业英语》系列教材是根据国家教育部大学英语教学大纲的要求和精神，由卫生部教材办组织编写的一套供医学本科生使用的系列教材，分为医学专业英语阅读、医学专业英语写作和医学专业英语听说三种教材。全套教材共五本：医学专业英语阅读一、二册；医学专业英语写作一册；医学专业英语听说一册和医学专业英语阅读教师用书一册。医学专业英语听说配有录音带。

医学专业英语阅读两册可供 80 个学时的教学使用。医学专业英语写作和医学专业英语听说分别可供 40 个学时的教学使用。三种教材每种都自成体系，可在教学中单独使用，但又可相互组合形成一个整体，作为一套系列教材使用。整套教材可供 160 个学时的教学使用。

本套教材是以大学英语四级为起点，面向 21 世纪英语教学改革和要求为目标而编写的。在体例、内容和编排等方面都与传统的医学英语教材有所不同，充分体现了医学英语的特点，针对医学生对英语的需求，突出了对学生的医学英语知识和能力的培养。阅读教材按人体解剖系统排列，基础与临床相结合。每一章包括医学英语构词法和阅读两大部分，在学习医学英语构词方法，扩大学生词汇量的基础上，提高学生的阅读能力。写作教材以实用和实践为主，讲授从医学应用文到医学论文摘要的写作方法和技巧，书中既有范、例文，又有常见错误分析。听说教材将英语听说有机结合，练习多样活泼，内容包括了从问诊到学术报告等情景。

《医学专业英语》全套教材由白永权教授担任总主编。医学专业英语阅读第一册由邱望生教授担任主编，郝长江教授担任副主编；医学专业英语阅读第二册由张宏清教授担任主编，周铁成教授担任副主编；医学专业英语写作由叶春阳副教授担任主编，聂文信副教授担任副主编；医学专业英语听说由董双辰教授担任主编，梁平教授担任副主编。

全国参加《医学英语》系列教材编写的单位有：西安交通大学、北京大学、华西医科大学、华中科技大学、中南大学、吉林大学、中山医科大学、第一军医大学、第二军医大学、第三军医大学、第四军医大学、哈尔滨医科大学、河北医科大学、青岛大学医学院、兰州医学院和承德医学院。

在该套教材的编写过程中，吴书楷教授、刘应宏教授、方廷钰教授、何筑丽教授、董哲教授、董丽明教授等对于编写大纲的制定和教材的审定，付出了很大心血，在此对

他们表示衷心地感谢。

由于时间急迫和编者水平及经验有限，教材中难免会有不妥之处，希望广大读者批评指正。

医学专业英语系列教材编写委员会

2000年11月

使用说明



本书为卫生部《医学专业英语》系列教材的阅读第一册，供已完成大学基础英语学习的医、药各专业学生和医、药卫生工作者使用。

阅读第一册共分九章，分别为人体概论、疾病概论、骨骼系统、肌肉系统、消化系统、呼吸系统、心血管系统、血液和免疫以及发育和遗传。每章都包括医学词汇(Medical Terminology)和阅读(Readings)两大部分。医学词汇部分每章都讲授 30 个与本章阅读内容相关的构词体和前、后缀，并配有大量的练习。阅读部分每章都包括三篇有关人体同一系统的文章，第一篇关于该系统的解剖和生理；第二篇关于该系统病理和疾病的概述；第三篇是该系统的某个特定疾病。所有阅读文章都选自国外最新权威医学刊物或教科书。三篇文章的内容由浅入深、相互照应，难度和长度逐篇加大。每篇文章后都配有多种形式的练习。为了便于读者学习和查阅生词，在书的后面附有总词汇表。

全书可供 40 学时的教学使用。在具体使用中，根据学生的英语水平和课程时数决定是全部选用，还是选用某一部分，或某几篇文章。一般来说，词汇部分是必学的，阅读部分的三篇文章可根据学生的不同水平来选用。剩余的文章留给有能力的学生自学。

参加本册教材的编写单位有华西医科大学、山东大学青岛医学院、哈尔滨医科大学和第三军医大学。参编人员的分工如下：第一、第二章和每三章后的构词复习由邱望生教授编写；第三和第四章由郝长江教授编写；第五章由张帆副教授编写；第六章由郝军副教授编写；第七、第八和第九章由陈忠荣副教授编写。

在本书的编写过程中，编者所在单位的领导以及许多教授和同事给予了我们大力的支持、指导和帮助，在此一并致谢。但由于时间的紧迫和编者的水平有限，书中肯定会存在缺点和错误，望同行和读者发现后不吝赐教。

编 者
2000 年 11 月

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Chapter 1



Human Body as a Whole

Section A Medical Terminology^①

I . Introduction

How many medical words are there in a medium-sized medical dictionary? The answer is around 100, 000, which is only a conservative estimate. Moreover, like the jargon^② in all forward-moving fields, the number is expanding so constantly and quickly that it defies any memorization! There are tools, however, that can aid in learning and remembering medical terms and even help in making informed guesses as to the meaning of unfamiliar words. Furthermore, their numbers are limited, about 400 to 500 or so (the most active ones), but the combinations derived from them are enormous. So, to learn how to use these tools is much more efficient and meaningful than to try to memorize every medical term.

Most medical terms are based on Greek and Latin words, which are consistent and uniform throughout many different areas. The tools you are going to learn to use are these Greek and Latin parts of words, which are called the root, prefix, suffix, combining vowels and combining forms.

- The root is the foundation of the word and all medical terms have one or more roots.
- The prefix is the beginning of the word. Not all medical terms contain prefixes, but the prefix can have an important influence on meaning.
- The suffix is the ending of the word and all medical terms have a suffix.
- The combining vowel^③ is the vowel that links the root to the suffix or the root to another root.

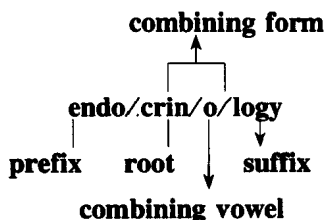
① the special words or terms used in a science, art, business etc.

② the language of a special group or profession.

③ It takes the form of "o" for most of the time and occasionally "i" as in the words *centimeter*, *millimeter*, etc.

- The combining form is the combination of the root and the combining vowel.

For example, consider the word:



endo is the prefix, meaning *within/inner*.

crin is the root, meaning *secrete*.

o is the combining vowel *servng as a link*.

crino is the combining form.

logy is the suffix, meaning the *study of*.

So, by analyzing the parts of the word, the meaning of endocrinology has been unlocked: it means the study of the human inner secretion from glands (the hormones).

II . Combining forms, prefixes and suffixes

Learn the following combining forms, prefixes and suffixes and write the meaning of the medical term in the space provided.

Combining form, prefix and suffix	Meaning	Terminology	Meaning
adren/o	adrenal gland (肾上腺)	adrenal adrenaline [ə'drenəlɪn] adrenatitis [ə,drənə'laitɪs]	-al pertaining to, hence pertaining to adrenal gland -lin/line substance, hence _____ _____ -itis inflammation, hence _____ _____
-al	pertaining to (有关于;...的)	medical biological [,baɪə'lɒdʒɪkəl] chemical	_____ _____ _____
-ar	pertaining to (有关于;...的)	vascular cellular molecular [mə'u'lekjulə]	vascul/o blood vessels, hence _____ _____ _____
bi/o	life (生物;生命)	biomedical [,baɪə'medɪkəl] biology bio physical [,baɪə'fɪzɪkəl]	-logy study of, hence _____ _____ _____

Combining form, prefix and suffix	Meaning	Terminology	Meaning
cardi/o	heart (心脏)	cardiology [ˌkɑːdi'ɒlədʒi]	_____
		cardiopathy [ˌkɑːdi'ɒpəθi]	- <i>pathy</i> disease, hence _____
		cardiogram _____	- <i>gram</i> record, hence _____
chrom/o chromomat/o	color (色)	chromosomes _____	- <i>somes</i> bodies, hence the color body, the substance that carries genetic features from parents to children (染色体)
		chromatin _____	- <i>in</i> substance, hence a protein substance in the nucleus of a cell, component of chromosomes (染色质)
		chromatoplasm [ˌkrəʊmətəplæzəm]	- <i>plasm</i> jelly substance in the cell (细胞浆), hence the colored portions of jelly substance, the pigment substance of cells (色素质)
crin/o	secrete (分泌)	endocrinology [ˌendəʊkri'nɒlədʒi]	_____
		crinogenic [ˌkraɪnə'dʒenɪk]	<i>gen/o</i> + <i>-ic</i> pertaining to the production, hence _____
		crinology [kraɪ'nɒlədʒi]	_____
-cyte	cell (细胞)	erythrocyte [i'riθrəʊsaɪt]	<i>eryth/o</i> red, hence _____
		leukocyte _____	<i>leuk/o</i> white, hence _____
		lymphocyte _____	<i>lymph/o</i> lymph (淋巴), hence _____
cyt/o	cell (细胞)	cytology [saɪ'tɒlədʒi]	_____
		cytochemistry [ˌsaɪtəʊ'kɛmɪstri]	_____
		cytobiology [ˌsaɪtəʊbaɪ'ɒlədʒi]	_____
embryo/o	embryo (胚胎)	embryology [ˌembri'ɒlədʒi]	_____
		embryoma [ˌembri'əʊmə]	- <i>oma</i> tumor, hence _____
		embryopathology _____	<i>pathology</i> the study of disease, hence _____
		[ˌembriəʊpə'θɒlədʒi]	_____

Combining form, prefix and suffix	Meaning	Terminology	Meaning
endo-	inner (内)	endocrinology [ˌendəʊkriˈnɒlədʒi] endocardial [ˌendəʊˈkɑːdiəl] endocellular [ˌendəʊˈseliələ]	_____
epi-	above (上)	epithelial [ˌepiˈθiːliəl] epidermic [ˌepiˈdɜːmik] epidermatitis [ˌepidəːməˈtaɪtɪs]	<i>thelial</i> nipple, the covering tissue, hence _____
erythr/o	red (红)	erythrocyte erythrocytometer [iˌriθəʊsaiˈtɒmitə] erythogenesis [iˌriθəʊˈdʒenɪsɪs]	<i>-meter</i> instrument, hence _____ _____
ex-	out (外;出)	exhale expel expand	<i>hale</i> breathe, hence _____ _____
-gen	sth that produced or produces (原)	pathogen oxygen nitrogen	<i>oxy-</i> oxygen, hence oxygen produced <i>nitro-</i> niter, hence niter produced
hemat/o (hem/o)	blood (血)	hematology [ˌhiːməˈtɒlədʒi] hemoglobin [ˌhiːməʊˈgləʊbɪn] hemocyte	_____
hist/o	tissue (组织)	histology [ˌhɪsˈtɒlədʒi] histopathology [ˌhɪstəʊpəˈθɒlədʒi] histotherapy [ˌhɪstəʊˈθerəpi]	<i>-globin</i> protein, hence protein of blood (血 红蛋白) _____

Combining form, prefix and suffix	Meaning	Terminology	Meaning
-ic	pertaining to (有关于;...的)	basic	_____
		toxic	_____
		symptomatic [ˌsɪmptəˈmætɪk]	_____
immun/o	protection/safe (免疫)	immunology [ˌɪmjuˈnɒlədʒi]	_____
		immune	_____
		immunodeficiency [ˌɪmjuːnədiˈfiʃənsi]	_____

-ine/-in	substance (素)	adrenaline	_____
		insulin	<i>insulu/o</i> island, hence substance that looks like island (胰岛素)
		urin	<i>ur/o</i> the urinary tract, hence _____
-ism	process or condition (状态; 过程)	metabolism [meˈtæbətɪzəm]	<i>meta-</i> change, hence the process of change, the total of the chemical process in a cell 新陈代谢
		anabolism [əˈnæbəlɪzəm]	<i>ana-</i> up, hence the process of building up complex materials (protein) from simple materials 合成代谢
		catabolism [kəˈtæbəlɪzəm]	<i>cata-</i> down, hence the process of breaking down complex materials (foods) from simpler substance and release energy 分解代谢

-logy	the study of (学)	sociology [ˌsəʊsiˈɒlədʒi]	<i>soci/o</i> society, hence _____
		urinology	_____
		[ˌjʊriˈnɒlədʒi]	_____
		cytology	_____
lymph/o	lymph (淋巴)	lymphocyte	_____
		lymphoma	_____
		lymphology	_____
		[lɪmˈfɒlədʒi]	_____
physi/o	physical (生理的)	physiology [ˌfɪziˈɒlədʒi]	_____
		physician	<i>-cian</i> personnel in a certain field, hence
		physiotherapy	_____
		[ˌfɪziəʊˈθerəpi]	_____

Combining form, prefix and suffix	Meaning	Terminology	Meaning
-plasm	formation, growth or substance of forma- tion; (浆;质)	cytoplasm	jelly substance in the cell (细胞浆)
		protoplasm	<i>prot/o</i> first, hence the first jelly substance in the cell (原生质)
		neoplasm	<i>neo-</i> new, hence _____
psych/o	mind (精神)	psychology [sai'kolədʒi]	_____
		psychosis	<i>-osis</i> abnormal condition, hence _____ _____ (精神病)
		psychobiology [,saikəubai'blədʒi]	_____
-somes	bodies (体)	chromosomes	the color body or substance that carries genetic features from parents to children (染色体)
		centrosomes	<i>centr/o</i> center, hence bodies in the center (中心体)
		ribosome	<i>rib/o</i> nucleic acid, hence the body of nucle- ic acid (核糖体)
thyr/o	thyroid gland (甲状腺)	hyperthyroidism [,haipə'θairədizəm]	<i>hyper-</i> over \ too much, hence _____
		hypothyroidism [,haipəu'θairədizəm]	<i>hypo</i> under \ too little, hence _____
		thyroiditis [θairi'daitis]	_____
-tomy	process of cutting (切开术;切断术)	anatomy [ə'naetəmi]	<i>ana-</i> apart; hence _____
		osteotomy [,ɔsti'ɔtəmi]	<i>oste/o</i> bone, hence _____
		cardiotomy [,kɑ:di'ɔtəmi]	_____
vascul/o	blood vessel (血管)	vascular	_____
		vasculitis [,væskju'laitis]	_____
		vasculolymphatic [,væskjuləlim'fætik]	_____

Exercises

A. Complete the following sentences.

1. Word beginnings are called _____.
2. Word endings are called _____.
3. The foundation of a word is known as the _____.
4. A vowel linking a suffix and a root, or linking two roots in a term is called _____.
5. The combination of a root and a combining vowel is known as the _____.

B. Give the meanings for the following combining forms, prefixes and suffixes and provide one example for each.

1. embryo/o _____
2. -ism _____
3. cardi/o _____
4. chrom/o _____
5. crin/o _____
6. cyt/o _____
7. -gen _____
8. lymph/o _____
9. -logy _____
10. -ar _____

C. Match Column I with Column II.

Column I (Combining form, prefix and suffix)	Column II (English term)
epi-	[1] protection/safe
hemat/o	[2] above
vascul/o	[3] life
-somes	[4] formation, growth, substance of formation
-cyte	[5] cell
-plasm	[6] inner/within
endo-	[7] bodies
immun/o	[8] blood
erythr/o	[9] tissue

Column I (Combining form, prefix and suffix)		Column II (English term)
hist/o	[10]	blood vessel
thyr/o	[11]	to cut open
physi/o	[12]	red
adren/o	[13]	thyroid gland
-tomy	[14]	adrenal gland
bi/o	[15]	physical

D. Give the stress to the following medical terms, for example: *histo'therapy*

- | | | |
|-------------------|---------------------|----------------------|
| 1. adrenalitis | 2. cellular | 3. molecular |
| 4. cardiopathy | 5. erythrocytometer | 6. erythrogenesis |
| 7. histopathology | 8. symptomatic | 9. immunology |
| 10. metabolism | 11. chromatoplasm | 12. erythrocyte |
| 13. embryoma | 14. embryopathology | 15. endocrinology |
| 16. endocardial | 17. endocellular | 18. epithelial |
| 19. epidermatitis | 20. erythrocyte | 21. lymphoma |
| 22. lymphology | 23. psychobiology | 24. chromosomes |
| 25. ribosome | 26. hyperthyroidism | 27. hypothyroidism |
| 28. thyroiditis | 29. anatomy | 30. vasculolymphatic |

Section B Readings

Passage One Human Body

In this passage you will learn:

- Classification of organ systems
- Structure and function of each organ system
- Associated medical terms

To understand the human body it is necessary to understand how its parts are put together and how they function. The study of the body's structure is called anatomy; the study of the body's function is known as physiology. Other studies of human body include biology, cytology, embryology, histology, endocrinology, hematology immunology, psychology etc.

Anatomists find it useful to divide the human body into ten systems, that is, the skeletal system, the muscular system, the circulatory system, the respiratory system, the digestive system, the urinary system, the endocrine system, the nervous system, the reproductive system and the skin. The principal parts of each of these systems are described and illustrated in this article.

The skeletal system is made of bones, joints between bones, and cartilage. Its function is to provide support and protection for the soft tissues and the organs of the body and to provide points of attachment for the muscles that move the body. There are 206 bones in the human skeleton. They have various shapes—long, short, cube-shaped, flat, and irregular. Many of the long bones have an interior space that is filled with bone marrow, where blood cells are made.

A joint is where bones are joined together. The connection can be so close that no movement is possible, as is the case in the skull. Other kinds of joints permit movement: either back and forth in one plane—as with the hinge joint of the elbow—or movement around a single axis—as with the pivot joint that permits the head to rotate. A wide range of movement is possible when the ball-shaped end of one bone fits into a socket at the end of another bone, as they do in the shoulder and hip joints.

Cartilage is a more flexible material than bone. It serves as a protective, cushioning layer where bones come together. It also connects the ribs to the breastbone and provides a structural base for the nose and the external ear. An infant's skeleton is made of cartilage that is gradually replaced by bone as the infant grows into an adult.

The muscular system allows the body to move, and its contractions produce heat, which helps maintain a constant body temperature. Striated muscles can be consciously controlled. The ends of these muscles are attached to different bones by connective tissue bands so that when the muscle contracts, one bone moves in relation to the other. This makes it possible to move the whole body, as when walking, or to move just one part of the body, as when bending a finger.

Contractions of the heart and smooth muscles are not under conscious control. Smooth muscles are found in the walls of organs such as the stomach and the intestines and serve to move the contents of these organs through the body.

The circulatory system. All parts of the body must have nourishment and oxygen in order to function and grow, and their waste products must be removed before they accumulate and poison the body. The circulatory system distributes needed materials and removes unneeded ones. It is made up of the heart, blood vessels, and blood, which together make up the cardiovascular system. The blood is also part of the body's defense system. It has antibodies and white blood cells that protect the body against foreign invaders.

The heart is a muscle that is divided into two nearly identical halves: one half receives blood from the lungs and sends it to the rest of the body, the other half sends blood that has traveled through the body back to the lungs. When the heart muscle contracts, the blood is forced out into arteries and enters small capillaries. Blood returns to the heart through veins.

Also functioning in circulation is the lymphatic system. Some of the fluid that surrounds cells does not reenter the blood vessels directly. This fluid, called lymph, returns to the heart by way of another system of channels—the lymph vessels. Lymph nodes along these vessels filter the fluid before it reenters the blood. The spleen is a large lymphatic organ that filters the blood.

The respiratory system takes in oxygen from the air and expels carbon dioxide and water vapor. Air enters the nose and mouth and travels through the larynx, and trachea. The trachea divides to

enter each of the two lungs and then divides more than 20 times to form a very large number of small air spaces. Oxygen from the air enters the blood through capillaries in the walls of these air spaces, and the blood releases carbon dioxide into the air spaces to be exhaled.

The digestive system consists of a tube extending from the mouth to the anus. In it, food and fluids are taken in, moved through the body, and broken down into small molecules that are absorbed into the circulatory system. This breakdown, known as digestion, is both a mechanical and a chemical process.

Food enters through the mouth, where chewing and saliva start to break it up and make it easier to swallow. Next, the food travels down through the esophagus to the stomach. Contractions of the stomach's muscular wall continue to break down the food mechanically, and chemical digestion continues when acid and enzymes are secreted into the stomach cavity.

The liquified food gradually passes into the small intestine. In the first part of the small intestine, called the duodenum, enzymes from the pancreas are added. These enzymes complete the chemical breakdown of the food. The digestion of fat is aided by bile, which is made in the liver and stored in the gall bladder. The small intestine of an adult is about 21 feet (6.4 meters) long. Most of its length is devoted to absorbing the nutrients released during these digestive activities.

The liquid remainder of the food enters the large intestine, or colon, which is about 12 feet (3.7 meters) long. It is more than twice as wide as the small intestine. In the large intestine most of the fluid is absorbed, and the relatively dry residues are expelled.

The urinary system maintains normal levels of water and of certain small molecules such as sodium and potassium in the body. It does this by passing blood through the kidneys, two efficient filtering organs that get rid of any excess of various molecules and conserve those molecules that are in short supply.

The fluid that leaves the kidneys, known as urine, travels through a tube called the ureter to the bladder. The bladder holds the urine until it is voided from the body through another tube, the urethra.

The endocrine system. The two systems that control body activities are the endocrine system and the nervous system. The former exerts its control by means of chemical messengers called hormones. Hormones are produced by a variety of endocrine glands, which release the hormones directly into the blood stream.

A major gland is the pituitary, which is located under the brain in the middle of the head. It produces at least eight hormones, which affect growth, kidney function, and development of the sex organs. Because some of the pituitary's hormones stimulate other glands to produce their own hormones, the pituitary is called the master gland.

Another gland, the thyroid, is located between the collar bones. Its hormone controls the rate of the body's metabolism. The sex organs (ovaries and testes) make the sex cells and also make hormones that control certain characteristics of males and females. Located on top of each kidney is the adrenal gland, which produces cortisone and adrenaline. The pancreas produces not only digestive enzymes but also insulin and glucagon, which control the body's use of sugar and starches.