

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



阅读二分册

READING II

总主编·白永权

主 编·张宏清



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《医学专业英语》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》系列教材的阅读二分册，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。

阅读二分册共有九章：眼睛和耳朵、内分泌系统、泌尿系统、生殖系统、神经系统、皮肤、肿瘤学、药物、高科技医学及其利弊。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，第一篇是关于该系统的解剖和生理；第二篇是关于该系统疾病的概述；第三篇是该系统的某一特定疾病。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，但难度和长度逐步加大。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学时决定是全部选用，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中科技大学、北京大学、西安交通大学、中南大学和第四军医大学。参编人员的分工如下：张宏清教授编写第一章、第六章和第九章；周铁成教授编写第三章和第四章；葛广纯教授编写第七章；王群英教授编写第五章；胡建副教授编写第二章；孙秋丹副教授编写第八章。

在编写过程中，编者所在单位的领导和同事给予了鼎力支持。罗菊梅、张宁等同志承担了大量的微机输入和编排工作，在此特致以衷心感谢。

编 者

2000 年 11 月

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Chapter 1



Eyes and Ears

Section A Medical Terminology

Part I Combining Forms, Prefixes and Suffixes

Learn the following combining forms that are pertaining to the eye and ear, and try to work out the meaning of the terms given.

Combining form, prefix and suffix	Meaning	Terminology	Meaning
choroids/o	choroids 脉络膜	choroiditis	inflammation of the choroids
		choroidal	pertaining to the choroids
		choroidectomy [ˌkɔːɪˈdektəmi]	surgical removal of the choroids
cili/o	ciliary 睫状的	ciliectomy	_____
		[ˌsɪliˈektəmi]	_____
		cilioretinal	_____
		[ˌsɪliˈretɪnəl]	_____
		ciliospinal	_____
[ˌsɪliəˈspainəl]	_____		
corne/o	cornea 角膜	corneitis	_____
		corneal	_____
		corneocyte [ˈkɔːniəsait]	_____

Combining form, prefix and suffix	Meaning	Terminology	Meaning
blephar/o	eyelid 眼睑	blepharodema [ˈblɛfəriˈdi:mə]	-edema, watery distension
		blepharitis	
		blepharotomy [ˈblɛfəˈrɒtəmi]	surgical incision
dacry/o	tear duct 泪管	dacryoma [ˈdeɪkriˈəʊmə]	oma, new thing produced
		dacryorrhea [ˈdeɪkriəˈri:ə]	overabundance of tears
		dacryostenosis [ˈdeɪkriəsteˈnəʊsɪs]	constriction
ir/o	iris 虹膜	iritis [ˈaɪəˈraɪtɪs]	
		iritic [aɪəˈrɪtɪk]	
		iritomy [aɪˈrɪtəmi]	
lacrim/o	tear 泪	lacrimal [ˈlækriːmə]	
		lacrimator [ˈlækriːmeɪtə]	agent promoting tears
		lacrimotomy [ˌlækriˈmɒtəmi]	of the lacrimal sac
mydr/o	enlarging 放大	mydriasis [miˈdraɪsɪs]	enlarging of the pupil
		mydriatic [miˈdriːætɪk]	
ocul/o	eye 眼	ocular	
		oculist	
		intraocular [ˌɪntrəˈɔkjʊlə]	intra-, inside
ophthalm/o	eye 眼	ophthalmology [ˌɒfθæɪˈmɒlədʒi]	
		ophthalmologist [ˌɒfθæɪˈmɒlədʒɪst]	
		exophthalmos [ˌeksɒfˈθælməs]	protrusion of the eyeball

Combining form, prefix and suffix	Meaning	Terminology	Meaning
opt/o	vision, eye 视力, 眼	optic optometer [ɒp'tɔːmɪtə] optometry [ɒp'tɔːmɪtri]	_____
presby/o	old age 老年	presbyopia [ˌpriːsbi'əʊpiə] presbyopic [ˌpriːsbi'əʊpɪk]	opia, vision obstacle of _____
pupill/o	pupil 瞳孔	pupillary pupillometer [ˌpjuːpɪ'lɔːmɪtə] pupilloscope [ˌpjuː'paɪləskəʊp]	_____
retin/o	retina 视网膜	retinopathy [retɪ'nɔːpəθi] retinitis subretinal	-pathy, disease _____
sclera/o	sclera 巩膜	scleritis episclera [ˌepɪ'sklɪərə]	_____
uve/o	uvea 眼色素层	uveitis uveitic uveal	_____
-opia	eye, vision 眼, 视力	hemianopia [ˌhemiə'nəʊpiə] hyperopia [ˌhaɪpə'rəʊpiə]	an-, negative blindness in half the visual field farsightedness or _____
-opsia	vision 视力	heteropsia [hetə'rɔːpsɪə]	heter/o, unequal _____
acous/o	sound, hearing 听觉	acoustic acoustics	_____

Combining form, prefix and suffix	Meaning	Terminology	Meaning
audi/o	hearing 听	audiology [ˌɔːdi'ɒlədʒi] audiometry audiometer	study and treatment of hearing disorders _____ _____
audit/o	hearing 听	auditory audition	_____ _____
aur/o	external ear (外)耳	aural aural discharge aurinasal [ˌɔːri'neɪzəl]	_____ _____ _____ -nasal, pertaining to the nose _____
cochle/o	cochlea ['kɒkliə] 耳蜗	cochlear ['kɒkliə] retrocochlear [ˌretroʊ'kɒkliə] cochleitis	_____ _____ retro-, behind _____ _____
labyrinth/o	labyrinth 内耳迷路 [ˌlæbərɪnθ]	labyrinthitis [ˌlæbərɪ'nθaɪtɪs] labrinthectomy [ˌlæbəri'θektəmi] labrinthotomy [ˌlæbərɪ'nθɒtəmi]	_____ _____ _____ _____
ot/o	ear 耳	otoscopy [ˌɒ'tɒskəpi] otorhinology [ˌɒtəri'nɒlədʒi]	visual examination of _____ study of the ear and the nose
staped/o	stapes 镫骨	otic stapedectomy [ˌsteɪpi'dektəmi] stapedial [stə'piðiəl]	_____ _____ _____ _____
tympan/o	eardrum (耳)鼓室	tympanic [tɪm'pænik] tympanostomy [ˌtɪmpə'nɒstəmi] tympanometry [tɪmpə'nɒmitri]	_____ _____ -stomy, placement of a tube _____ -metry, measurement _____

Combining form, prefix and suffix	Meaning	Terminology	Meaning
vestibul/o	vestibule 前庭	vesbular	_____
		[ves'tibjulə]	_____
		vestibulotomy	_____
		[ves,tibju'lətəmi]	_____
		vestibuloocular	pertaining to the vestibule and the eye
		[ves,tibjulə'əukjulə]	
-cush	hearing 听觉	anacush	ana-, lack _____
		[,ænə'kjush]	_____
		presbycush	_____
		[,pri:bi'kjush]	_____
-otia	condition of the ear 耳廓	macrotia	unusually large ears
		[mæ'krəufiə]	_____
		microtia	_____
		[mai'krəufiə]	_____

Part II Exercises

A. Give the meaning of each of the following combining forms, prefixes and suffixes and provide an example word for each of them.

1. staped/o _____
2. dacry/o _____
3. corne/o _____
4. scler/o _____
5. cochle/o _____
6. ophthalm/o _____
7. vestibul/o _____
8. -opia _____
9. -otia _____
10. -opsia _____

B. Write a combining form for each of the following words and give a medical word with the combining form.

1. eye _____

2. choroid _____
3. retina _____
4. eyelid _____
5. tear _____
6. external ear _____
7. eardrum _____
8. ear _____
9. hearing _____
10. inner ear _____

C. Match Column One with Column Two.

Column One	Column Two
mydr/o _____	[1] old age
pupil/o _____	[2] iris
uve/o _____	[3] eye, vision
presby/o _____	[4] sound, hearing
cili/o _____	[5] enlarging
ir/o _____	[6] pupil
opt/o _____	[7] ciliary
acous/o _____	[8] uvea
-cuisis _____	[9] tear
-otia _____	[10] labyrinth
choroids/o _____	[11] eyelid
ophthalm/o _____	[12] hearing
blephar/o _____	[13] choroids
lacrim/o _____	[14] condition of the ears
labyrinth/o _____	[15] eye

D. Write a medical word for each of the following definitions.

1. measurement of hearing _____
2. inflammation of the inner ear _____
3. pertaining to the eyes _____
4. swelling of the eyelid _____
5. muscle of the stapes _____
6. visual examination of the ear _____
7. surgical removal of a portion
of the ciliary body _____
8. inflammation of the iris _____
9. pertaining to tears _____

- 10. inflammation of the cornea _____
- 11. surgical incision of the blephar _____
- 12. cells having the feature of cornea _____
- 13. swelling of a blocked tear duct _____
- 14. physician specialized in the eyes _____
- 15. abnormal small ear _____

Section B Readings

Passage One

Lead-in

Why can we see? Why can we hear? These kinds of capabilities are attributed to the important sense organs of eyes and ears. Without their normal work, one would become blind and deaf. The case is that every one wishes the excellent talent of the two organs, but he can't know clearly the anatomy and physiology of them. This text will lead us to the marvelous places the nature gives us.

Eyes and Ears

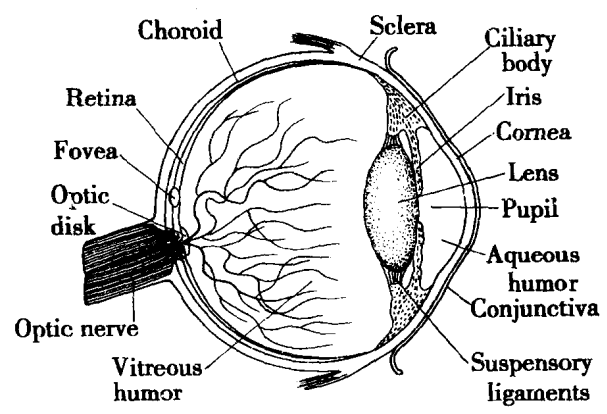


Figure 1-1 The Eye

I . Introduction

As we know, the nerve cells that carry impulses from a sense organ or sensory receptor area, such as the skin, taste buds, and olfactory regions (centers of smell in the nose), to the brain are called afferent sensory neurons.

The eye and the ear are sense organs, like the skin, taste buds, and olfactory regions. As such, they are receptors whose sensitive cells may be activated by a particular form of energy or stimulus in the external or internal environment. The sensitive cells in the eye and ear respond to the stimulus by initiating a series of nerve impulses along afferent sensory neurons that lead to the brain.

No matter what kind of stimulus is applied to a particular receptor, the sensation felt is determined by the regions in the brain that are connected to that receptor. Thus, mechanical injury that might stimulate receptor cells in the eye and the ear would produce sensations of vision (flashes of light) and sound (ringing in the ears). Similarly, if one could make a nerve connection between the sensitive receptor cells of the ear and the area in the brain associated with sight, it would be possible to perceive, or "see," sounds. This chapter will be concentrated on the sense organs such as the eye and ear.

II . The Eyes

The eyes function as the body's organs of sight. Like other sensory organs, the eyes are designed to detect stimuli in the environment and to convey information about these stimuli to the brain. Sensory receptors in the eye respond to light and to shadings of darkness and light. Within each eye, specialized structures use the shadings in reflected light to generate a point-by-point reproduction of objects in the visual field. Vision results from the interaction of these structures with a network of nerve cells that convert light energy into electrical impulses for transmission to the brain. In the brain, the two-dimensional reproductions generated by each eye are integrated to produce a single, three-dimensional image of objects in the environment.

The adult human eyes are globe-shaped structures, each approximately one inch in diameter. Both eyes are set in bony sockets, called orbits, in the skull. Each eye consists of layers of specialized tissue surrounding two liquid-filled cavities. The main structures of the eye are illustrated in Figure 1-1 and described in the paragraphs below.

The Sclera

The white outer layer of the eyeball is called the sclera. Composed of collagen and other connective tissue, the sclera forms a tough outer surface that protects the inner structures of the eye from injury. At the front of the eye, the sclera forms a transparent, domed structure called the cornea. The cornea has a curved surface that serves to focus light coming into the eye. In addition, the cornea protects the front portion of the eye from injury.

The Uvea

Lying immediately below the sclera is the vascular layer of the eye, which is called the uvea. In addition to supplying blood to muscles and nerves within the eye, the pigmented tissues of the uvea also give the eyes their color. Three structures make up the uvea: the choroid, the ciliary body, and the iris.

The choroid is a layer of darkly pigmented tissue that lies just below the sclera. In addition to housing the many tiny blood vessels that deliver nutrients to tissues throughout the eye, the dark surface of the choroid also acts to absorb light within the eye. This prevents the blurring of visual images by light present within the eye.

Just below the junction of the sclera and cornea, the choroid becomes thicker, forming a structure known as the ciliary body. As you will see below, smooth muscles that are embedded in the ciliary body adjust the shape of the lens to enable the eye to focus on objects at varying distances.

Another extension of the choroid is the iris, a ring of pigmented tissue that protrudes into the cavity of the eye. The pigmentation of the iris is what determines eye color. The opening in the center of the iris is called the pupil. By regulating the size of the pupil, tiny muscles in the iris control the amount of light entering the eye. In bright light, muscles in the iris contract, causing the pupils to shrink. In dimmer light, these muscles relax, causing the pupils to dilate. Contraction of the pupils is referred to as miosis, while dilation of the pupils is called mydriasis. In healthy individuals, both pupils are roughly the same size.

Refractory Media

Light entering the eye passes through several liquid and solid structures that refract (bend) the light rays slightly, bringing them into sharper focus. These refractory structures include the crystalline lens and the fluids that fill the internal chambers of the eyeball.

The crystalline lens is suspended from the ciliary body just behind the pupil. The lens is a transparent, elastic disk which is attached to the ciliary body by tiny fibers called suspensory ligaments. When the eye is focusing on closer objects, muscles in the ciliary body cause the lens to take on a roughly spherical shape. To focus on more distant objects, ciliary muscles flatten the lens slightly. The process by which the ciliary body adjusts the curvature of the lens, allowing it to focus on nearer or more distant objects, is called accommodation. Age-related changes in the efficiency of this process are the reason most older people require glasses for near vision.

The lens and the suspensory ligaments divide the inner eyeball cavity into two chambers. The chamber between the cornea and the lens is filled with a watery fluid called the aqueous humor. The chamber behind the lens is filled with a more gelatinous fluid called the vitreous humor. In addition to its refractory function, the vitreous humor maintains pressure within the eyeball, preventing it from collapsing inward.

The Retina

Light-sensitive receptor cells in the eye are located in the retina, a thin layer of tissue located on the inner surface of the choroid. Based on their microscopic appearance, retinal cells are classified as rods and cones. Rods, which are most concentrated on the periphery of the retina, detect shades of gray at all levels of light. Cones, which are found mainly in the central area of the retina, detect color but operate only at high light levels. Both rods and cones contain light-sensitive molecules called photopigments that are capable of converting light energy into an electrical impulse that can be transmitted to the brain for interpretation. Although rods are far more numerous than cones, cones generally detect visual stimuli with greater precision. Thus, maximal visual acuity occurs in a cone-rich area of the retina known as the fovea.

The Optic Nerve

Nerve fibers and blood vessels enter and leave the retina through an area called the optic disk. Because the optic disk has no rods or cones, it is also referred to as the blind spot. Beyond the optic disk, fibers from each eye join to form the optic nerve. The optic nerve carries impulses from the retina to areas of the brain that are responsible for processing visual information.

Supporting Structures

Although not directly involved in vision, other structures help protect the eye from injury. The eyelids, for example, are folds of skin that protect the eyeball from physical trauma by closing reflexively in response to any sudden movement toward the eye. Additional protection is provided by the eyelashes, two or three rows of fine hairs which curve outward from the front edge of each eyelid.

The inside of each eyelid is lined by a thin, usually transparent membrane known as the conjunctiva, which also extends over the white of the eye. Irritation of the conjunctiva by dust or smoke can cause blood vessels in the membrane to swell, producing the condition commonly known as "bloodshot eyes."

Closely associated with the conjunctiva is the lacrimal apparatus, the glandular system that produces and drains tears. The main lacrimal glands secrete tears during crying and when the eye is injured. The accessory glands, which lie within the conjunctiva, constantly produce a smaller volume of tears, lubricating the conjunctiva and the cornea with each blink of the eyes. Once produced, tears collect at the edges of the eyes, where they pass through nasolacrimal drainage ducts into the nose.

III . The Ears

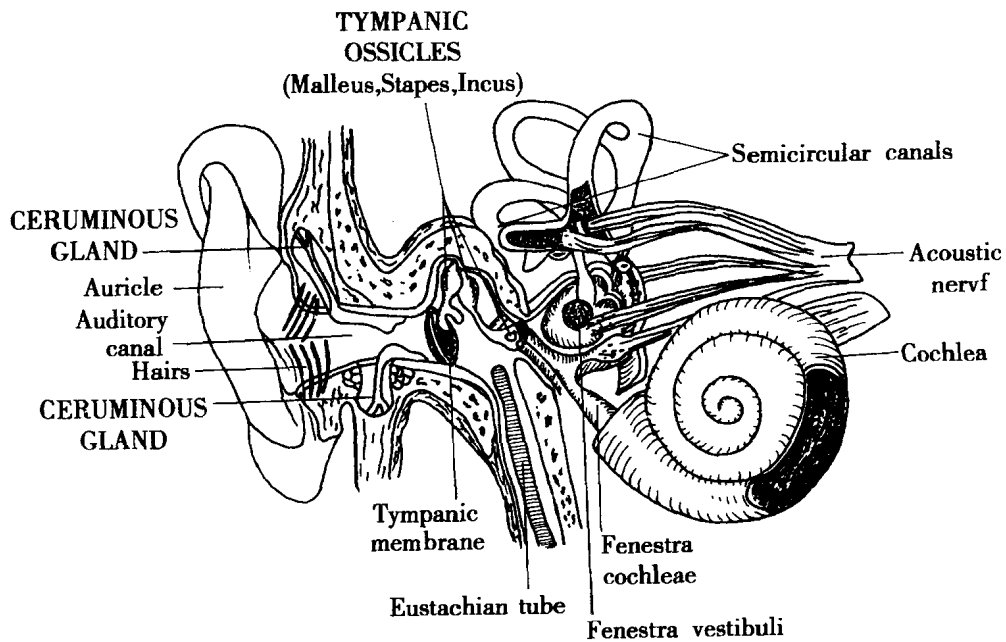


Figure 1-2 The Ear

The external ear, the middle ear or tympanic cavity, the internal ear or labyrinth, and the acoustic center and acoustic nerve comprise the auditory apparatus.

The external ear is composed of the auricle, and the external auditory canal. The auricles are composed of folds of cartilage, covered with skin that produces a waxy yellow substance called cerumen. Cerumen functions as a filter for the outer ear, trapping dust and other foreign substances and