大学英语应用提高阶段专业英语系列教材

新世纪医学英语教程

[生物医学]

New Century Medical English Course

[Biological Medicine]

华仲乐 □主 编

上海外语教育出版社

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New Century Medical English Course (Biological Medicine)

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（按姓氏笔划排列）

前　言

根据国家教育部对大学生提出的全面要求，大学生在完成基础阶段英语学习之后应进入应用提高阶段结合各自专业的专业英语学习。为此，我们根据以往专业英语的教学实践和当前大学生掌握英语的实际能力，以及教育部颁发的《大学英语教学大纲》（修订本）对专业英语教学的具体要求，编写了这套《新世纪医学英语教程》。

作为专业英语教材，首先应当与医学教学的实际相结合。当前的医学发展，正面临崭新的前景。传统的医学模式作为医学的基础仍然占据着重要的地位，同时，医学又日益与心理学、社会学、伦理学等学科结合，呈现出前所未有的广度和深度。基于这一情况，本教程共分上下两册：上册以生物医学为主线，下册则以社会医学为主要题材。本书是上册。

本册的选材有代表性地涉及生物医学的各个主要领域，从细胞、组织到人体系统，循序渐进，并推进到当前医学所特别关心的营养、微生物、肿瘤、遗传和组织工程学等前沿阵地。为了兼顾学生继续提高英语语言水平和熟悉医学英语的双重需要，兼顾对医学一般知识的了解和阅读专业文献的不同要求，本书每个单元均包括一篇概述性文章（Reading A）和一篇专业性文章（Reading B）。前者以轻松、活泼的文体介绍一般的医学内容，后者以严谨的科技语言论述具体的医学问题，两者之间构成一种内容一致、语言风格互相补充的关系。课文有一定长度，从阅读量上保证了提高阅读能力的基本需要。

本书的练习安排全面突出教育部《大学英语教学大纲》对专业英语教学在听、说、读、写、译方面的要求：设有阅读理解、词汇运用、听说互动及英汉互译；此外，根据医学英语的特点，专设构词基础和参考拾遗两个项目。每个练习项目紧扣课文，既是对课文从语言到内容的复习，又是课文内容的有机延伸。比如，阅读理解练习有选择、是非、简答等形式，有针对性而无繁琐；词汇运用部分所用例句均与医学内容相结合，为学生提供运用重点词汇的范例；听说互动以听写为基础，材料由浅入深，要求从易到难，为学生逐步掌握用听、说进行交流的能力打基础；英汉互译突出对医学英语常用语法结构的熟悉和运用，这也是为医学英语写作所作的最基本、最实际的训练。构词基础简明扼要地介绍医学英语构词的基本特点，并提供最常用的词素和实例；参考拾遗则提供与每一个单元有关的具有知识性、实用性或趣味性的补充内容。

考虑到当前各医学院校专业英语教学在学时和要求等具体问题上的不统一，我们建议使用本教材的教师根据各自的实际情况，决定使用方法。例如，可将一部分内容作课堂教学，另一部分布置学生自学，进行必要的检查；或可选择性地重点使用听说部分或翻译部分。教师也可以扬长避短，例如对医学不甚熟悉的教师可使用概述性文章；由专业教师任教的可使用专业性文章，等等。总之，专业英语的教学尚在起步阶段，没有很成熟的经验。我们欢迎使用本书

的教师和同学提出宝贵意见、建议和看法，使本教程能在使用中得到不断更新和完善。

本册教材由华仲乐教授任主编，副主编为丁年青和胡继岳，叶春阳、郁正芬和赖月珍参加编写；唐骏昌审读了全稿。全体编委参与了本教材的策划、选材和审定。

编　者

2000.5.3

Contents

Unit 1

Reading A

The Human Complex — a Never-failing Source of Wonderment

"In my view," wrote Thomas Jefferson in 1814, "no knowledge can be more satisfactory to a man than that of his own frame, its parts, their functions and actions." Distinguished thinkers before and since Jefferson have held this belief, but, curiously, it is not one which the average person wholeheartedly shares. Man's attitude toward his own body — his single most precious possession — is decidedly ambivalent. At one and the same time he is fascinated by it and fearful of it, partly in echo of ancient taboos, partly in the conviction that the body is too complicated to understand.

The possible approaches to a study of the body are legion. To the cynic, the body is no more than a tenement of clay; to the poet, a palace of the soul; to the physician, an all-too-ailing hulk. The psychiatrist sees it as a housing for the mind and personality. The geneticist sees it as a perpetuator of its own kind. The biologist sees it as an organism which can alter the future as a result of the experience of the past.

All the specialized scientific views of the body are valid. All, however, must start from the same premise: an awareness of the body's basic structure and functions — its anatomy and physiology. And the bedrock principle of our present understanding of the body is that all living matter is composed of cells basically similar in structure and function.

A Swarm of Tiny Specialists

Studies of the cell — what it is, what it does and how it reproduces itself — have revealed it to be a fantastically complex world in itself. One of the major wonders of the cell is the disparity between its minuteness and the prodigiousness of its activity. Each cell is so tiny that millions of them may be found in a half-inch cube of human body tissue. Yet each comprises an almost unimaginably busy chemical laboratory with a highly ordered division of labor.

The cell has two main parts: a nucleus, containing the genetic material deoxyribonucleic acid (DNA), and a surrounding semifluid cytoplasm. Bounding the cytoplasm is the cell membrane, which keeps the cell contents in and undesirable material out, yet permits passage of both proper nutrients and wastes. The nucleus — cell headquarters — governs the major activities of the cytoplasm; its finest hour, however, comes at reproduction time, when chromosomes containing DNA split. It is in the cytoplasm that the cell's day-to-day business is carried on. Each of its various components, or organelles, is a specialist of surpassing skill. One type breaks down the food given entry by the cell membrane and converts it into energy. Another provides the site for the synthesis of protein — along with reproduction, a major function of most cells. Another packages the manufactured protein for transport wherever needed in the body.

To operate efficiently, the cell thus requires specific help from the body as a whole: food to provide raw material for the release of energy, oxygen to help break down the food, water to transport inorganic substances like calcium and sodium. Once its needs are satisfied, the cell itself provides the intricate mechanism for maintaining the balance essential to keep it in kilter — in short, to keep the body alive and healthy.

Cells share certain common characteristics, but most of the body's cells develop specialized features and abilities. The cells that form bone collect calcium salts; these cells are locked together in solid chunks, immobile. By contrast, the white cells of the blood, which fight off invading bacteria, roam freely about the body. Other cells make special chemicals for the body's use — the hormones produced in the endocrine glands, or the digestive enzymes poured into the intestine from the pancreas. Still other cells form the incredibly thin membranes in the lung or kidney that permit the filtering or exchange of dissolved body fuels and wastes.

According to their particular features and their intended functions, cells form different types of tissue: bone, muscle, blood, nerve tissue, connective tissue and epithelium. The cells that make up each of these are not identical, but belong together by reason of underlying similarities.

For example, the cells of bowel muscle are rounder and shorter than the long, spindly cells of leg muscle, yet both kinds contract forcefully when stimulated by a chemical or electrical impulse. The cells that make up bone tissue differ sufficiently to make brittle bone in one place and spongy, resilient cartilage in another, yet all store the salts which give bone its calcified structure. The loose network of cells that supports the fatty padding under the skin and the dense capsule of cells that holds the knee joint in place are both forms of connective tissue. All nerve cells, varied as they may be, receive and conduct electrochemical impulses.

All blood cells, varied as they may be, float freely in a circulating fluid, plasma.

The most versatile cells are those of the various kinds of epithelium. Forming the body's external coating — the skin — epithelial cells protect things inside from things outside. They also form the lining of the mouth, stomach and bowel, the inner surface of blood vessels, and the membranes that permit the lungs to breathe and the kidneys to excrete. Over the cornea of the eye they become a sort of transparent windshield, to permit the free entry of light to the retina. Other epithelial cells secrete a protective mucus to keep intestines, lungs and nasal passages from drying out. Still others manufacture powerful hormones that regulate the body's chemical reactions.

Interlock and Overlap

The tissues comprise the structural materials of the body's organ systems. These, in turn, may be compared to a number of corporations with interlocking directorates. Indeed the interdependence of the organ systems has led to some disagreement over how many there are. The venerable Gray's Anatomy — used by medical students for more than 100 years — lists 10 systems: nervous, digestive, respiratory, vascular, urogenital, endocrine, skeletal, muscular, joints and external covering. Other authorities categorize joints and bones together because they are so closely related, or separate the sense organs from the nervous system, or lump all the internal organs — respiratory, digestive, endocrine and urogenital — under the resounding title of splanchnological system.

Far more important than their labels is the fact that the systems interact; the breakdown of one can damage or destroy the others. Ideally, of course, all systems would do their jobs perfectly all the time. Unfortunately, nature permits no such perfection. All of them suffer from malfunctions at one point or another. The wonder is that breakdowns are the exception rather than the rule.

Within the healthy body itself there is no absolute criterion for " normal." Variations occur not only between individuals, but within the individual himself, sometimes from hour to hour, depending on his activity at the time. Doctors privately joke that even a baboon could get through medical school if he learned to say, with enough profundity, "It varies." One of the practitioner's major headaches is to determine whether a patient's condition reflects an actual illness or merely a variation within a broad range of normal. The breadth of this range may be indicated by a few statistics. The weight of the healthy heart is considered to be anywhere between 240 and 360 grams; the weight of the healthy liver, between 1,000 and 2,000 grams; the level of sugar in the blood, between 70 and 130 milligrams.

New Words

ambivalent / æm'bivələnt /	*a*.	怀有矛盾心情的
taboo / tə'bu: /	*n*.	禁忌
conviction / kən'vikʃən /	*n*.	信念
legion / 'li:dʒən /	*n*. & *a*.	许多,大量
cynic / 'sinik /	*n*.	愤世嫉俗者
cynical	*a*.	愤世嫉俗的
tenement / 'teniмənt /	*n*.	住房,廉价公寓
ailing / 'eiliŋ /	*a*.	生病的
hulk / hʌlk /	*n*.	笨重之身躯
an all-too-ailing hulk		一个易生病的躯体
psychiatrist / ˌsai'kaiətrist /	*n*.	精神科医生,精神病学家
geneticist / dʒi'netisist /	*n*.	遗传学家
genetic	*a*.	遗传的
genetics	*n*.	遗传学
gene	*n*.	基因
perpetuator / pəˌpetju'eitə /	*n*.	使永存者
valid / 'vælid /	*a*.	有效的
validate / 'vælideit /	*v*.	使……有效
anatomy / ə'nætəmi /	*n*.	解剖学
physiology / ˌfizi'ɔlədʒi /	*n*.	生理学
bedrock / 'bedrɔk /	*n*.	基础;基本事实
a swarm of	*n*.	一群
disparity / dis'pæriti /	*n*.	不同; 不等
prodigious / prə'didʒəs /	*a*.	巨大的,惊人的
tissue / 'tisju: /	*n*.	组织
nucleus / 'nju:kliəs /	*n*.	核;细胞核
deoxyribonucleic / di:ˌɔksiˌraibənju:kli:ik / acid		脱氧核糖核酸(简称 DNA)
cytoplasm / 'saitəplæzəm /	*n*.	细胞质,细胞浆
membrane / 'membrein /	*n*.	膜
chromosome / 'krəuməsəm /	*n*.	染色体
organelle / 'ɔ:gənel /	*n*.	细胞器
surpassing / sə:'pɑ:siŋ /	*a*.	无比的,非凡的

calcium / 'kælsiəm /	*n*.	钙
sodium / 'səudiəm /	*n*.	钠
intricate / 'intrikit /	*a*.	复杂的
kilter / 'kiltə /	*n*.	正常状况
chunk / tʃʌŋk /	*n*.	厚片
bacteria / bæk'tiəriə /	*n*.	细菌
endocrine / 'endəukrain /	*a*.	内分泌(腺)的
endocrine gland		内分泌腺
digest / dai'dʒest /	*v*.	消化
digestion	*n*.	消化
digestive	*a*.	消化的
enzyme / 'enzaim /		酶
intestine / in'testin /	*n*.	肠
pancreas / pæŋkriəs /	*n*.	胰(腺)
epithelium / ˌepi'θi:liəm /	*n*.	上皮
epithelial	*a*.	上皮的
bowel / 'bauəl /	*n*.	肠
spindly / 'spindli /	*a*.	细长的
brittle / 'britl /	*a*.	易碎的，脆的
spongy / 'spʌndʒi /	*a*.	海绵似的，疏松多孔的
resilient / ri'ziliənt /	*a*.	有弹性的，适应力强的
cartilage / 'kɑ:tilidʒ /	*n*.	软骨
calcified / 'kælsifaid /	*a*.	骨化的，钙化的
calcify	*v*.	(使)骨化；(使)钙化
fatty / 'fæti /	*a*.	脂肪的
padding / 'pædiŋ /	*n*.	垫料
lining / 'lainiŋ /	*n*.	衬里；衬料
plasma / 'plæzmə /	*n*.	浆；原生质，原浆
excrete / eks'kri:t /	*v*.	排泄；分泌
cornea / 'kɔ:niə /	*n*.	角膜
windshield / 'windʃi:ld /	*n*.	(汽车前的)挡风玻璃
retina / 'retinə /	*n*.	视网膜
secrete / si'kri:t /	*v*.	分泌
secretion	*n*.	
mucus / 'mju:kəs /	*n*.	粘液

nasal / 'neizəl /	*a*.	鼻的
interlock / 'intəlɔk /	*n*. & *v*.	连锁;(使)连结
overlap / ˌəuvə'læp /	*n*. & *v*.	重叠,复合
vascular / 'væskju:lə /	*a*.	血管的,脉管的
urogenital / ˌjuərəu'dʒenitl /	*a*.	泌尿生殖(器)的
resounding / ri'saundiŋ /	*a*.	响亮的
splanchnological / splæŋkˌnɔlədʒikəl /	*a*.	内脏学的
splanchnology	*n*.	内脏学
malfunction / ˌmæl'fʌŋkʃən /	*n*.	故障;疾病
criterion / krai'tiəriən /	*n*.	标准
baboon / bə'bu:n /	*n*.	狒狒
profundity / prə'fʌnditi /	*n*.	深奥;深奥的事物

Ⅰ. Comprehension Questions

Based on the information in the reading, choose the best answer for each question.

1. What attitude have great thinkers taken toward the human body?
   A) They have been curious about its functions and actions.
   B) They have been satisfied with the little knowledge known to man.
   C) They have shared the same belief with average persons.
   D) They have regarded knowledge of the human body as taboos.
2. The second paragraph implies that _____.
   A) all people basically take the same approach to the study of the body
   B) all approaches toward the study of the body are scientific
   C) a valid study of the body attributes a lot to anatomy and physiology
   D) anatomy and physiology are all we need to know to understand the body
3. The studies of the cell probably do not include _____.
   A) its structure
   B) its functions
   C) its perpetuation
   D) its origin
4. What is true of the cell membrane?
   A) It is one of the two main parts of the cell.
   B) It is surrounded by the cytoplasm.
   C) It forms an impassable wall to all materials.
   D) It only allows certain materials in and out.