Medical English
An Integrated Course

医学英语
综合教程

主编 蔡郁 汪媛

医学英语系列教材

南京大学出版社

安徽省高等学校“十二五”省级规划教材

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编写说明

为了适应时代对医学人才培养的需求，我们以多年的教学经验积累，将医学生的英语学习与他们的专业学习相结合，编写了本册医学英语教材。本书以提高医学生对英语的听、说、读、写、译的全面能力以及自主学习能力为目标，而将重点放在对医学英语的综合掌握和应用上。

全书16个单元。每个单元围绕一个与医学相关的大主题，构成如下：

a）**主课文**——英美医学专业书籍、杂志中的文章精选，体现医学专业知识的主要方面：① 医学基础知识（前部分内容，一般为大二医学生所学过的专业知识）；② 临床专业知识（后部分内容）。学习目的：准确理解文义，掌握医学英语词汇的发音、构成以及句子结构。

b）**听力**——复合式听写训练。学习目的：听懂专业性医学报告。

c）**口语**——选择医学报道性文章作为泛读材料，让学生读后做口头汇报和讨论。学习目的：模拟学术活动，强化口语表达能力。

d）**词汇扩展**——构词法学习。学习目的：为进一步自学夯实词汇基础。

e）**快速阅读**——现代医学评论文章或报道性文章精选。学习目的：提高迅速掌握信息的能力。

f）**写**——快速阅读后写出概述。学习目的：既检测医学生快

速阅读的质量，又培养写作能力。

g）**指导性翻译练习**——① 英译汉：分析语法结构，提高汉语表达的准确性。② 汉译英：医学文摘翻译讲解；常用句翻译。

● **教学提示**：主课文、听力、口语部分在课堂上完成，读写和翻译练习要求学生在课后自主完成。

教学相长，教材也需要在教学实践中不断完善。真诚希望同行专家对本书多提宝贵意见，指出不足，以便于我们修订提高。

* * * * * *

本书“医学文摘翻译”部分主要参考了唐清理先生主编的《如何写英语医学论文摘要》；书中英语文章多选自国外医学专业书刊，部分选自互联网。在此对唐清理老先生及书刊、网上文章作者谨表感谢！

丁启鹏、朱同生两位教授审看书稿并提出宝贵建议，在此也深表谢忱！

Contents

UNIT 1

Anatomy

Part Ⅰ Text

New words and expressions

vascular ['væskjʊlə] *adj*. 血管的
bronchial ['brɒŋkɪəl] *adj*. 支气管的
nutritive ['nju:trɪtɪv] *adj*. 营养的
alveolar [æl'vɪələ] *n*. 小气泡
aorta [eɪ'ɔ:tə] *n*. 主动脉
intercostal [ˌɪntə(:)'kɒstl] *adj*. 肋间的
ventricle ['ventrɪkl] *n*. 心室
thebesian 特贝西乌斯的 ~ veins 心最小静脉
shunt [ʃʌnt] *v*./ *n*. (使)分流
hilum (复 hila) ['haɪləm] *n*. 门
periphery [pə'rɪfərɪ] *n*. 外周,周围
arteriole [ɑ:'tɪərɪəʊl] *n*. 小动脉
capillary [kə'pɪlərɪ] *n*. 毛细血管
atrium ['eɪtrɪəm] *n*. 心房
retroperitoneal [ˌretrəʊˌperɪtə'ni:əl] space 腹膜后隙
coronal ['kɒrənl] *adj*. 冠状的
cortex ['kɔ:teks] *n*. 皮质
medulla [me'dʌlə] *n*. 髓质
corticomedullary junction 皮髓质结合
apices ['epɪˌsɪz] *n*. 顶尖
papilla [pə'pɪlə] *n*. 乳突
calyx ['keɪlɪks] *n*. 盏
renal ['ri:nl] *adj*. 肾的
renal pelvis ['pelvɪs] *n*. 肾盂

ureter [jʊə'riːtə] *n*. 输尿管
nephron ['nefrɒn] *n*. 肾单位
glomerulus [glə'merjʊləs] *n*. (肾)小球
parenchyma [pə'reŋkɪmə] *n*. 实质
arcuate ['ɑː kjʊɪt] artery ['ɑːtərɪ] *n*. 弓状动脉
glomerula [glə'merjʊlə] *adj*. 肾小球的
afferent ['æfərənt] *adj*. 传入的

Structures of the Lung and the Kidney

The Blood Vessels of the Lung

The lung receives its blood supply from two vascular systems — the bronchial and pulmonary circulations. The nutritive blood flow to all but the alveolar structures comes from the bronchial circulation, which originates from the aorta and upper intercostal arteries and receives about 1 per cent of the cardiac output. About one third of the venous effluent(流出物) of the bronchial circulation drains into the systemic veins and back to the right ventricle. The remainder drains into the pulmonary veins and, along with the contribution from the thebesian veins in the heart, represents a component of the 1 to 2 per cent right-to-left shunt found in normal subjects.

The pulmonary arterial system runs alongside the airways from the hila(肺门) to the periphery. The arteries down to the level of the subsegmental airways (2-mm diameter) are thin-walled, predominantly elastic vessels. Beyond this, the arteries become muscularized until they reach diameters of 30μm, at which point the muscular coat disappears. Most of the arterial pressure drop takes place in these small muscular arteries, which are responsible for the active control of blood flow distribution in the lung. The pulmonary arterioles empty into an extensive capillary network and drain into thin-walled pulmonary veins, which eventually join with the arteries and bronchi at the hilum and exit the lung to enter the left atrium.

Elements of Renal Structure

The human kidneys are anatomically positioned in the retroperitoneal space at level of the lower thoracic and upper lumbar vertebrae. Each adult kidney weighs approximately 150gm and measures about 12 by 6 by 3cm. A coronal section of the kidney reveals two distinct regions. The outer region, the cortex, is about 1 cm in

thickness. The inner region is the medulla and is made up of several conical structures. The bases of these pyramidal structures are located at the corticomedullary junction, and the apices extend into the hilum of the kidney as the papillae. Each papilla is enclosed by a minor calyx; these calyces collectively communicate with major calyces, forming the renal pelvis. Urine that flows from the papillae is collected in the renal pelvis and passes to the bladder through the ureters.

Blood is delivered to each kidney from a main renal artery branching from the aorta. The main artery usually divides into two main segmental branches, which are further subdivided into lobar arteries supplying the upper, middle, and lower regions of the kidney. These vessels subdivide further as they enter the renal parenchyma and create interlobar arteries that course toward the renal cortex. These smaller arteries provide perpendicular branches, the arcuate arteries, at the corticomedullary junction. Interlobular arteries arising from the arcuates extend into the cortex. The glomerular capillaries receive blood through afferent arterioles that originate from these terminal interlobular arteries.

Histologically, the kidney is composed of a basic structural unit known as the nephron. Each human kidney contains approximately 1 million nephrons. The nephron is composed of two major components: a filtering(过滤用的) element composed of an enclosed capillary network (the glomerulus) and an attached tubule. The tubule contains several distinct anatomic and functional segments.

(518 words)

— From *CECIL Essentials of Medicine* 3rd *edition* by Thomas E. Anderoli, J. Claude Bennett, Charles C.J. Carpenter, Fred Plum and Lloyd H. Smith, Jr.

Questions:

1. Where do the lungs get their blood supply?
2. Does the nutritive blood flow to the alveolar structures?
3. What is/ are responsible for the active control of blood flow distribution in the lung?
4. Where do afferent arterioles come from?
5. What do the interlobular arteries provide at the corticomedullary junction?

Part Ⅱ Listening

You are going to hear a passage, which will be read three times. Please listen to the passage and fill in the blanks with the words you've heard.

In general, two functional cell types are present in ① _____ tissue: those responsible for ② _____ and those responsible for mechanical ③ _____. Nodal cells are thought to be the ④ _____ formation in the sinus node and are ⑤ _____ adrenergic(肾上腺素的) and cholinergic(类胆碱[功]能的) nerve fibers.

Atrial and ⑥ _____ myocardial cells, the contractile cells of the heart, contain ⑦ _____ bundles termed myofibrils that traverse the length of the fiber. Myofibrils ⑧ _____ longitudinally repeating sarcomeres. Thick filaments composed of myosin constitute the A band, whereas thin filaments(丝状体) composed primarily of actin extend from the Z line through the I band into the A band, ⑨ _____ where thin filaments are absent. Thick and thin filaments overlap in the A band, and ⑩ _____ _____

(172 words)

— From *CECIL Essentials of Medicine* 3rd *edition* by Thomas E. Anderoli, J. Claude Bennett, Charles C.J. Carpenter, Fred Plum and Lloyd H. Smith, Jr.

Part Ⅲ Oral Presentation and Discussion

Please read the following passage and make an oral presentation.

Coronary Artery Disease

What is coronary artery disease?

Coronary artery disease occurs when fatty deposits called plaque (say "plak") build up inside the coronary arteries. The coronary arteries wrap around the heart and supply it with blood and oxygen. When plaque builds up, it narrows the arteries and reduces the amount of blood that gets to your heart. This can lead to serious problems, including heart attack.

Coronary artery disease (also called CAD) is the most common type of heart disease. It is also the number one killer of both men and women in the United States.

It can be a shock to find out that you have coronary artery disease. Many people only find out when they have a heart attack. Whether or not you have had a heart attack, there are many things you can do to slow coronary artery disease and reduce your risk of future problems.

What causes coronary artery disease?

Coronary artery disease is caused by hardening of the arteries, or atherosclerosis(动脉硬化). Atherosclerosis occurs when plaque builds up inside the arteries. (Arteries are the blood vessels that carry oxygen-rich blood throughout your body.) Atherosclerosis can affect any arteries in the body. When it occurs in the arteries that supply blood to the heart, it is called coronary artery disease.

Plaque is a fatty material made up of cholesterol, calcium, and other substances in the blood. To understand why plaque is a problem, compare a healthy artery with an artery with atherosclerosis:

- A healthy artery is like a rubber tube. It is smooth and flexible, and blood flows through it freely. If your heart has to work harder, such as when you exercise, a healthy artery can stretch to let more blood flow to your body's tissues.
- An artery with atherosclerosis is more like a clogged pipe. Plaque narrows the artery and makes it stiff. This limits the flow of blood to the tissues. When the heart has to work harder, the stiff arteries can't flex to let more blood through, and the tissues don't get enough blood and oxygen.

When plaque builds up in the coronary arteries, the heart doesn't get the blood it needs to work well. Over time, this can weaken or damage the heart. If a plaque tears, the body tries to fix the tear by forming a blood clot around it. The clot can block blood flow to the heart and cause a heart attack.

What are the symptoms?

Usually people with coronary artery disease don't have symptoms until after age 50. Then they may start to have symptoms at times when the heart is working harder and needs more oxygen, such as during exercise. Typical first symptoms include:

- Chest pain, called angina (say "ANN-juh-nuh" or "ann-JY-nuh").

- Shortness of breath.
- Heart attack. Too often, a heart attack is the first symptom of coronary artery disease.

Some people don't have symptoms. In rare cases, a person can have a "silent" heart attack, without symptoms.

How is coronary artery disease diagnosed?

To diagnose coronary artery disease, doctors start by doing a physical exam and asking questions about your past health and your risk factors. Risk factors are things that increase the chance that you will have coronary artery disease.

Some common risk factors are being older than 65; smoking; having high cholesterol, high blood pressure, or diabetes; and having heart disease in your family. The more risk factors you have, the more likely it is that you have coronary artery disease.

If your doctor thinks you have coronary artery disease, you may have tests, such as:

- Electrocardiogram (EKG or ECG), which checks for problems with the electrical activity of your heart.
- Chest X-ray.
- Blood tests.
- Exercise electrocardiogram, commonly called a "stress test." This test checks for changes in your heart while you exercise.

Your doctor may order other tests to look at blood flow to your heart. You may have a coronary angiogram(血管造影片) if your doctor is considering a procedure to remove blockages, such as angioplasty(血管成形片) or bypass surgery.

How is it treated?

Treatment focuses on taking steps to manage your symptoms and reduce your risk for heart attack and stroke. Some risk factors you can't control, such as your age or family history. Other risks you can control, such as high blood pressure and high cholesterol. Lifestyle changes can help lower your risks. You may also need to take medicines or have a procedure to open your arteries.

Lifestyle changes are the first step for anyone with coronary artery disease. These changes may stop or even reverse coronary artery disease. To improve your heart health:

- Don't smoke. This may be the most important thing you can do. Quitting