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医学英文原版改编双语教材

（供临床、基础、预防、口腔、药学、检验、护理等专业使用）

TEXTBOOK OF SURGERY

外科学

Original Editors

Lawrence W. Way

Gerard M. Doherty

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Chen Xiaoping（陈孝平）

科学出版社

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Preface for Adaptation Edition

English is one of the most widely used languages in the world. Our medical students and young doctors have to master the English perfectly well in order to obtain information from over-increasing medical literature and original research work and the latest developments of medical science through Internet sources. Meanwhile, they are able to introduce their researchs or clinical experiences to the world. Owing to these reasons, The Scinece Press had elaborately planed to compile a textbook for surgery in English that was written or organized by the experts in relevant fields. This textbook will be used as a learning tool for the five-year and seven-year medical students and also a work tool for young doctors.

This textbook is based on the current Teaching Syllabus of Surgery and the latest edition of *Current Diagnosis & Treatment of Surgery* which is the most widely used textbook for surgery in the Europe and America, and also the writer's rich experience in teaching surgery. The editting order of the content of this textbook is kept in accordance with the Chinese version of textbook *Surgery*, in order that the readers can consult the Chinese version by comparision with English version in their learning process. The textbook includes 49 chapters, 850,000 words, 100 pictures, and orderly introduces the general principles of the surgery, diseases of neurosurgery, disease of thoracic and cardiac surgery, diseases of general surgery, diseases of angio surgery, diseases of urinary sugery and diseases of orthopedics. Due to limited space, some contents were deleted, however, basically the essence and style of the original work were reserved. The particular emphasis of this textbook is kept on the diagnosis and treatment of surgical diseases, in order that reader study standard professional English of surgery, and also learn diagnosis and treatment method of relevant diseases abroad.

What we need to explain is that the units of calculation, diagnosis and treatment procedures, names and quantities of medicine used in original work were kept in order to reserve the style of the original work. It is expected that the readers could compare it with Chinese version textbook in their learning.

We hope that readers could learn the essence, characteristics and idiomatic expression of the English usage in surgery by studying this textbook, and further improve their ability in using medical English by refering this textbook.

Due to our limited capabilities, mistakes are probably not evitable during the writing and editting. We sincerely wish that our readers could provide us with their comments and suggestions, so that we can further improve this book in its furture editions.

Chen Xiaoping
Dec. 2005

改编版前言

英语是世界上应用最广泛的语言之一。对于我国的医学生和青年医生来说，只有掌握了英语才能顺利阅读日益增多的英语医学文献和原著，或从因特网上获取医学专业发展的最新信息。同时，也只有掌握了英语，才能将自己研究的成果或经验介绍到国外去。

鉴于上述原因，科学出版社精心策划并组织国内有关专家选摘编写了英文版外科学教材，供全国高等学校或医药院校五年制和七年制医学生及青年医生使用。

本教材以目前在欧美国家广泛使用的最新版外科学教材 *Current Diagnosis & Trentment of Surgery* 为基础，以我国现行的外科学教学大纲为依据，结合编者自己多年的教学经验摘编而成。在编排顺序上，尽量与中文版规划教材《外科学》保持一致，以方便读者在学习过程中能够相互参考和对照。全书共分 49 章，约 85 万字，图 100 余幅。依次介绍了外科学总论，神经外科疾病、胸心外科疾病、普通外科疾病、血管外科疾病、泌尿外科疾病及骨科疾病。由于篇幅所限，在摘编内容上作了较多的删减，但基本上保留了原著的精华和风格。主要侧重于疾病的诊断和治疗部分，其目的是要在帮助读者学习规范的外科学专业英语的同时，了解国外对相关疾病的诊断和治疗方法。

需要说明的是，为了保留原著的表述方式，本教材沿用了原著中的计量单位、诊疗程序、药物名称及剂量，希望读者在学习过程中与中文版教材对照比较。

我们希望读者能通过学习本教材体会外科学专业英语的精髓、特点及习惯用法，举一反三，触类旁通，不断提高医学英语水平。

由于编者水平有限，在摘编过程中难免有不当之处，敬请读者在使用本教材过程中给予指正，以便再版时进一步修订。

陈孝平

2005 年 12 月

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Chapter 1 Approach to the Surgical Patient

The management of surgical disorders requires not only the application of technical skills and training in the basic sciences to the problems of diagnosis and treatment but also a genuine sympathy and indeed love for the patient. The surgeon must be a doctor in the oldfashioned sense, an applied scientist, an engineer, an artist, and a minister to his or her fellow human beings. Because life or death often depends upon the validity of surgical decisions, the surgeon's judgment must be matched by courage in action and by a high degree of technical proficiency.

THE HISTORY

At their first contact, the surgeon must gain the patient's confidence and convey the assurance that help is available and will be provided. The surgeon must demonstrate concern for the patient as a person who needs help and not just as a "case" to be processed through the surgical ward. This is not always easy to do, and there are no rules of conduct except to be gentle and considerate. Most patients are eager to like and trust their doctors and respond gratefully to a sympathetic and understanding person. Some surgeons are able to establish a confident relationship with the first few words of greeting; others can only do so by means of a stylized and carefully acquired bedside manner. It does not matter how it is done, so long as an atmosphere of sympathy, personal interest, and understanding is created. Even under emergency circumstances, this subtle message of sympathetic concern must be conveyed.

Eventually, all histories must be formally structured, but much can be learned by letting the patient ramble a little. Discrepancies and omissions in the history are often due as much to overstructuring and leading questions as to the unreliability of the patient. The enthusiastic novice asks leading questions; the cooperative patient gives the answer that seems to be wanted; and the interview concludes on a note of mutual satisfaction with the wrong answer thus developed.

BUILDING THE HISTORY

History taking is detective work. Preconceived ideas, snap judgments, and hasty conclusions have no place in this process. The diagnosis must be established by inductive reasoning. The interviewer must first determine the facts and then search for essential clues, realizing that the patient may conceal the most important symptom—eg, the passage of blood by rectum—in the hope (born of fear) that if it is not specifically inquired about or if nothing is found to account for it in the physical examination, it cannot be very serious.

Common symptoms of surgical conditions that require special emphasis in the history taking are discussed in the following paragraphs.

Pain

A careful analysis of the nature of pain is one of the most important features of a surgical history. The examiner must first ascertain how the pain began. Was it explosive in onset, rapid, or gradual? What is the precise character of the pain? Is it so severe that it cannot be relieved by medication? Is it constant or intermittent? Are there classic associations, such as the rhythmic pattern of small bowel obstruction or the onset of pain preceding the limp of intermittent claudication?

One of the most important aspects of pain is the patient's reaction to it. The overreactor's description of pain is often obviously inappropriate, and so is a description of "excruciating" pain offered in a casual or jovial manner. A patient who shrieks and thrashes about is either grossly overreacting or suffering from renal or biliary colic. Very severe pain—due to infection, inflammation, or vascular disease—usually forces the patient to restrict all movement as much as possible.

Moderate pain is made agonizing by fear and anxiety. Reassurance of a sort calculated to restore the patient's confidence in the care being given is often a

more effective analgesic than an injection of morphine.

Vomiting

What did the patient vomit? How much? How often? What did the vomitus look like? Was vomiting projec-tile? It is especially helpful for the examiner to see the vomitus.

Change in Bowel Habits

A change in bowel habits is a common complaint that is often of no significance. However, when a person who has always had regular evacuations notices a distinct change, particularly toward intermittent alternations of constipation and diarrhea, colon cancer must be suspected. Too much emphasis is placed upon the size and shape of the stool—eg, many patients who normally have well-formed stools may complain of irregular small stools when their routine is disturbed by travel or a change in diet.

Hematemesis or Hematochezia

Bleeding from any orifice demands the most critical analysis and can never be dismissed as due to some immediately obvious cause. The most common error is to assume that bleeding from the rectum is attributable to hemorrhoids. The character of the blood can be of great significance. Does it clot? Is it bright or dark red? Is it changed in any way, as in the coffee-ground vomitus of slow gastric bleeding or the dark, tarry stool of upper gastrointestinal bleeding? The full details and variations cannot be included here but will be emphasized under separate headings elsewhere.

Trauma

Trauma occurs so commonly that it is often difficult to establish a relationship between the chief complaint and an episode of trauma. Children in particular are subject to all kinds of minor trauma, and the family may attribute the onset of an illness to a specific recent injury. On the other hand, children may be subjected to severe trauma though their parents are unaware of it. The possibility of trauma having been inflicted by a parent must not be overlooked.

When there is a history of trauma, the details must be established as precisely as possible. What was the patient's position when the accident occurred? Was consciousness lost? Retrograde amnesia (inability to remember events just preceding the accident) always indicates some degree of cerebral damage. If a patient can remember every detail of an accident, has not lost consciousness, and has no evidence of external injury to the head, brain damage can be excluded.

In the case of gunshot wounds and stab wounds, knowing the nature of the weapon, its size and shape, the probable trajectory, and the position of the patient when hit may be very helpful in evaluating the nature of the resultant injury.

The possibility that an accident might have been caused by preexisting disease such as epilepsy, diabetes, coronary artery disease, or hypoglycemia must be explored.

When all of the facts and essential clues have been gathered, the examiner is in a position to complete the study of the present illness. By this time, it may be possible to rule out (by inductive reasoning) all but a few possible diagnoses. A novice diagnostician asked to evaluate the causes of shoulder pain in a given patient might include ruptured ectopic pregnancy in the list of possibilities. The experienced physician will automatically exclude that possibility on the basis of sex or age.

Family History

The family history is of great significance in a number of surgical conditions. Polyposis of the colon is a classic example, but diabetes, Peutz-Jeghers syndrome, chronic pancreatitis, multiglandular syndromes, other endocrine abnormalities, and cancer are often better understood and better evaluated in the light of a careful family history.

Past History

The details of the past history may illuminate obscure areas of the present illness. It has been said that people who are well are almost never sick, and people who are sick are almost never well. It is true that a patient with a long and complicated history of diseases and injuries is likely to be a much poorer risk than even a very old patient experiencing a major surgical illness for the first time.

In order to make certain that important details of the past history will not be overlooked, the system review must be formalized and thorough. By always reviewing the past history in the same way, the experienced examiner never omits significant details. Many skilled examiners find it easy to review the past history by inquiring about each system as they perform the

physical examination on that part of the body.

In reviewing the past history, it is important to consider the nutritional background of the patient. There is an increasing awareness throughout the world that the underprivileged malnourished patient responds poorly to disease, injury, and operation. Indeed, there is some evidence that various lesions such as carcinoma may be more fulminating in malnourished patients. Malnourishment may not be obvious on physical examination and must be elicited by questioning.

Acute nutritional deficiencies, particularly fluid and electrolyte losses, can be understood only in the light of the total (including nutritional) history. For example, a low serum sodium may be due to the use of diuretics or a sodium-restricted diet rather than to acute loss. In this connection, the use of any medications must be carefully recorded and interpreted.

A detailed history of acute losses by vomiting and diarrhea—and the nature of the losses—is helpful in estimating the probable trends in serum electrolytes. Thus, the patient who has been vomiting persistently with no evidence of bile in the vomitus is likely to have acute pyloric stenosis associated with benign ulcer, and hypochloremic alkalosis must be anticipated. Chronic vomiting without bile—and particularly with evidence of changed and previously digested food—is suggestive of chronic obstruction, and the possibility of carcinoma should be considered.

It is essential for the surgeon to think in terms of nutritional balance. It is often possible to begin therapy before the results of laboratory tests have been obtained, because the specific nature and probable extent of fluid and electrolyte losses can often be estimated on the basis of the history and the physician's clinical experience. Laboratory data should be obtained as soon as possible, but a knowledge of the probable level of the obstruction and of the concentration of the electrolytes in the gastrointestinal fluids will provide sufficient grounds for the institution of appropriate immediate therapy.

The Patient's Emotional Background

Psychiatric consultation is seldom required in the management of surgical patients, but there are times when it is of great help. Emotionally and mentally disturbed patients require surgical operations as often as others, and full cooperation between psychiatrist and surgeon is essential. Furthermore, either before or after an operation, a patient may develop a major psychotic disturbance that is beyond the ability of the surgeon to appraise or manage. Prognosis, drug therapy, and overall management require the participation of a psychiatrist.

On the other hand, there are many situations in which the surgeon can and should deal with the emotional aspects of the patient's illness rather than resorting to psychiatric assistance. Most psychiatrists prefer not to be brought in to deal with minor anxiety states. As long as the surgeon accepts the responsibility for the care of the whole patient, such services are superfluous.

This is particularly true in the care of patients with malignant disease or those who must undergo mutilating operations such as amputation of an extremity, ileostomy, or colostomy. In these situations, the patient can be supported far more effectively by the surgeon and the surgical team than by a consulting psychiatrist.

Surgeons are becoming increasingly more aware of the importance of psychosocial factors in surgical convalescence. Recovery from a major operation is greatly enhanced if the patient is not worn down with worry about emotional, social, and economic problems that have nothing to do with the illness itself. Incorporation of these factors into the record contributes to better total care of the surgical patient.

THE PHYSICAL EXAMINATION

The complete examination of the surgical patient includes the physical examination, certain special procedures such as gastroscopy and esophagoscopy, laboratory tests, X-ray examination, and follow-up examination. In some cases, all of these may be necessary; in others, special examinations and laboratory tests can be kept to a minimum. It is just as poor practice to insist on unnecessary thoroughness as it is to overlook procedures that may contribute to the diagnosis. Painful, inconvenient, and costly procedures should not be ordered unless there is a reasonable chance that the information gained will be useful in making clinical decisions.

THE ELECTIVE PHYSICAL EXAMINATION

The elective physical examination should be done in an orderly and detailed fashion. One should acquire

the habit of performing a complete examination in exactly the same sequence, so that no step is omitted.

When the routine must be modified, as in an emergency, the examiner recalls without conscious effort what must be done to complete the examination later. The regular performance of complete examinations has the added advantage of familiarizing the beginner with what is normal so that what is abnormal can be more readily recognized.

All patients are sensitive and somewhat embarrassed at being examined. It is both courteous and clinically useful to put the patient at ease. The examining room and table should be comfortable, and drapes should be used if the patient is required to strip for the examination. Most patients will relax if they are allowed to talk a bit during the examination, which is another reason for taking the past history while the examination is being done.

A useful rule is to first observe the patient's general physique and habitus and then to carefully inspect the hands. Many systemic diseases show themselves in the hands (cirrhosis of the liver, hyperthyroidism, Raynaud's disease, pulmonary insufficiency, heart disease, and nutritional disorders).

Details of the examination cannot be included here. The beginner is urged to consult special texts.

Inspection, palpation, and auscultation are the timehonored essential steps in appraising both the normal and the abnormal. Comparison of the two sides of the body often suggests a specific abnormality. The slight droop of one eyelid characteristic of Horner's syndrome can only be recognized by comparison with the opposite side. Inspection of the female breasts, particularly as the patient raises and lowers her arms, will often reveal slight dimpling indicative of an infiltrating carcinoma barely detectable on palpation.

Successful palpation requires skill and gentleness. Spasm, tension, and anxiety caused by painful examination procedures may make an adequate examination almost impossible, particularly in children.

Another important feature of palpation is the laying on of hands that has been called part of the ministry of medicine. A disappointed and critical patient often will say of a doctor, "He hardly touched me." Careful, precise, and gentle palpation not only gives the physician the information being sought but also inspires confidence and trust.

When examining for areas of tenderness, it may be necessary to use only one finger in order to precisely localize the extent of the tenderness. This is of particular importance in examination of the acute abdomen.

Auscultation, once thought to be the exclusive province of the physician, is now more important in surgery than it is in medicine. Radiologic examinations, including cardiac catheterization, have relegated auscultation of the heart and lungs to the status of preliminary scanning procedures in medicine. In surgery, however, auscultation of the abdomen and peripheral vessels has become absolutely essential. The nature of ileus and the presence of a variety of vascular lesions are revealed by auscultation. Bizarre abdominal pain in a young woman can easily be ascribed to hysteria or anxiety on the basis of a negative physical examination and X-rays of the gastrointestinal tract. Auscultation of the epigastrium, however, may reveal a murmur due to obstruction of the celiac artery.

Examination of the Body Orifices

Complete examination of the ears, mouth, rectum, and pelvis is accepted as part of a complete examination. Palpation of the mouth and tongue is as essential as inspection. Inspection of the rectum with a sigmoidoscope is now regarded as part of a complete physical examination. Every surgeon should acquire familiarity with the use of the ophthalmoscope and sigmoidoscope and should use them regularly in doing complete physical examinations.

THE EMERGENCY PHYSICAL EXAMINATION

In an emergency, the routine of the physical examination must be altered to fit the circumstances. The history may be limited to a single sentence, or there may be no history if the patient is unconscious and there are no other informants. Although the details of an accident or injury may be very useful in the total appraisal of the patient, they must be left for later consideration. The primary considerations are the following: Is the patient breathing? Is the airway open? Is there a palpable pulse? Is the heart beating? Is massive bleeding occurring?

If the patient is not breathing, airway obstruction must be ruled out by thrusting the fingers into the mouth and pulling the tongue forward. If the patient is

unconscious, the respiratory tract should be intubated and mouth-to-mouth respiration started. If there is no pulse or heartbeat, start cardiac resuscitation.

Serious external loss of blood from an extremity can be controlled by elevation and pressure. Tourniquets are rarely required.

Every victim of major blunt trauma should be suspected of having a vertebral injury capable of causing damage to the spinal cord unless rough handling is avoided.

Some injuries are so life-threatening that action must be taken before even a limited physical examination is done. Penetrating wounds of the heart, large open sucking wounds of the chest, massive crush injuries with flail chest, and massive external bleeding all require emergency treatment before any further examination can be done.

In most emergencies, however, after it has been established that the airway is open, the heart is beating, and there is no massive external hemorrhage—and after antishock measures have been instituted, if necessary—a rapid survey examination must be done. Failure to perform such an examination can lead to serious mistakes in the care of the patient. It takes no more than 2 or 3minutes to carefully examine the head, thorax, abdomen, extremities, genitalia (particularly in females), and back. If cervical cord damage has been ruled out, it is essential to turn the injured patient and carefully inspect the back, buttocks, and perineum.

Tension pneumothorax and cardiac tamponade may easily be overlooked if there are multiple injuries.

Upon completion of the survey examination, control of pain, splinting of fractured limbs, suturing of lacerations, and other types of emergency treatment can be started.

LABORATORY AND OTHER EXAMINATIONS

Laboratory Examination

Laboratory examinations in surgical patients have the following objectives: (1) screening for asymptomatic disease that may affect the surgical result (eg, unsuspected anemia or diabetes); (2) appraisal of diseases that may contraindicate elective surgery or require treatment before surgery (eg, diabetes, heart failure); (3) diagnosis of disorders that require surgery (eg, hyperparathyroidism, pheochromocytoma); and (4) evaluation of the nature and extent of metabolic or septic complications.

Patients undergoing major surgery, even though they seem to be in excellent health except for their surgical disease, should have a complete blood and urine examination. A history of renal, hepatic, or heart disease requires detailed studies. Latent, asymptomatic renal insufficiency may be missed, since many patients with chronic renal disease have varying degrees of nitrogen retention without proteinuria. A fixed urine specific gravity is easily overlooked, and preoperative determination of the blood urea nitrogen and serum creatinine is frequently required. Patients who have had hepatitis may have no jaundice but may have severe hepatic insufficiency that can be precipitated into acute failure by blood loss or shock.

Medical consultation is frequently required in the total preoperative appraisal of the surgical patient, and there is no more rewarding experience than the thorough evaluation of a patient with heart disease or gastrointestinal disease by a physician and a surgeon working together. It is essential, however, that the surgeon not become totally dependent upon a medical consultant for the preoperative evaluation and management of the patient. The total management must be the surgeon's responsibility and is not to be delegated. Moreover, the surgeon is the only one with the experience and background to interpret the meaning of laboratory tests in the light of other features of the case—particularly the history and physical findings.

Imaging Studies

Modern patient care calls for a variety of critical radiologic examinations. The closest cooperation between the radiologist and the surgeon is essential if serious mistakes are to be avoided. This means that the surgeon must not refer the patient to the radiologist, requesting a particular examination, without providing an adequate account of the history and physical findings. Particularly in emergency situations, review of the films and consultation are needed.

When the radiologic diagnosis is not definitive, the examinations must be repeated in the light of the history and physical examination. Despite the great accuracy of X-ray diagnosis, a negative gastrointestinal study still does not exclude either ulcer or a neo-

plasm; particularly in the right colon, small lesions are easily overlooked. At times, the history and physical findings are so clearly diagnostic that operation is justifiable despite negative imaging studies.

Special Examinations

Special examinations such as cystoscopy, gastroscopy, esophagoscopy, colonoscopy, angiography, and bronchoscopy are often required in the diagnostic appraisal of surgical disorders. The surgeon must be familiar with the indications and limitations of these procedures and be prepared to consult with colleagues in medicine and the surgical specialties as required.

Chapter 2 Fluid and Electrolyte Management

The surgical patient is liable to develop disorders of body fluid volume and composition, some of which may be iatrogenic. Understanding the physiologic mechanisms that regulate the composition and volume of the body fluids and the principles of fluid and electrolyte therapy is therefore essential for surgical patient management.

BODY WATER AND ITS DISTRIBUTION

Total body water comprises 45% —60% of body weight; the percentage in any individual is influenced by age and the lean body mass, but in health it remains remarkably constant from day to day. Table 2-1 lists the average values of total body water as a percentage of body weight for men and women of different ages. Total body water is divided into intracellular (ICF) and extracellular (ECF) compartments. Intracellular water represents about two-thirds of total body water, or 40% of body weight. The remaining one-third of body water is extracellular. ECF is divided into two compartments: (1) plasma water, comprising approximately 25% of ECF, or 5% of body weight; and (2) interstitial fluid, comprising 75% of ECF, or 15% of body weight.

Table 2-1 Total body water (as percentage of body weight) in relation to age and sex

Age	Male	Female
10—18	59	57
18—40	61	51
40—60	55	47
Over 60	52	46

The solute composition of the intracellular and extracellular fluid compartments differs markedly (Figure 2-1). ECF contains principally sodium, chloride, and bicarbonate, with other ions in much lower concentrations. ICF contains mainly potassium, organic phosphate, sulfate, and various other ions in lower concentrations. Even though plasma water and interstitial fluid have similar electrolyte compositions, plasma water contains more protein than interstitial

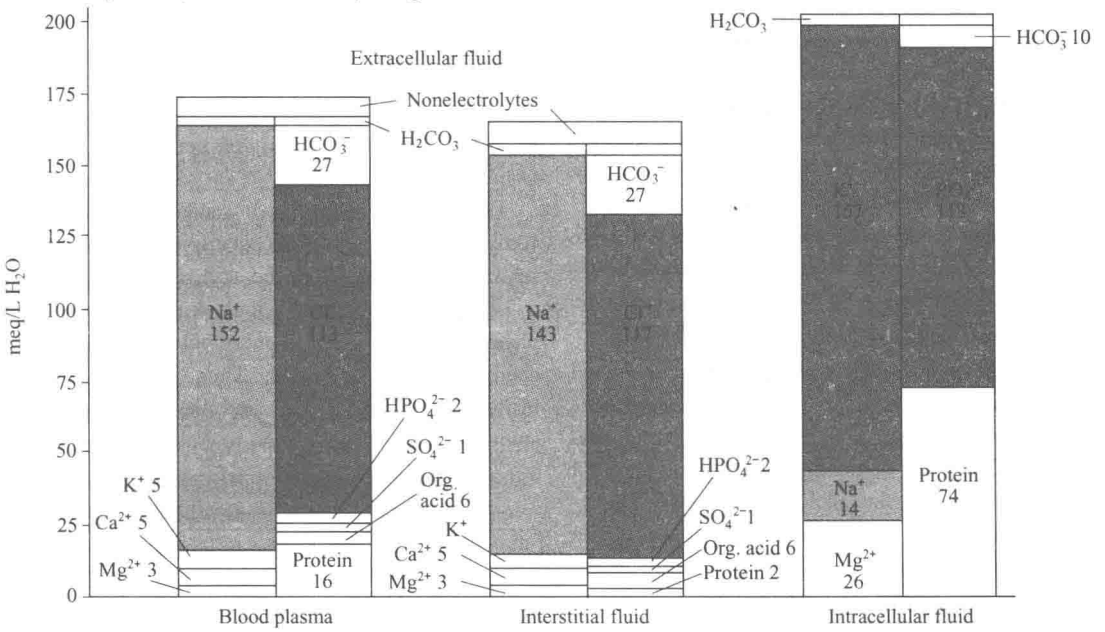

Figure 2-1 Electrolyte composition of human body fluids. Note that the values are in meq/L of water, not of body fluid. (Reproduced, with permission, from Leaf A, Newburgh LH: *Significance of the Body Fluids in Clinical Medicine*, 2nd ed. Thomas, 1955.)