高等院校医药护理类规划教材

A COURSE BOOK OF NURSING ENGLISH

护理英语教程

主编 姜丽萍 副主编 卢易

ZHEJIANG UNIVERSITY PRESS
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前　言

《护理英语教程》是为高等院校护理专业编写的专业英语教材。本书旨在帮助广大护理专业学生、研究生以及护理工作者提高护理专业英语知识和技能，提高以英语为工具进行信息交流的能力。

《护理英语教程》一书共分十四个单元、三个附录，由医学英语构词法、疾病常用护理英语和英文护理论文写作、附录三部分构成。第一部分为医学英语构词法，介绍医学词根、前后缀等内容，突出医学英语词汇前缀、后缀、词根的介绍和分析。第二部分以系统为导向，详细介绍了各系统常见疾病的医学术语构词、课文阅读及练习，内容包括循环系统、呼吸系统、消化系统等的常见疾病，每单元以解剖、生理、病理及临床表现为轴线展开；同时在阅读和写作单元，介绍了英文护理论文的写作内容和方法、语言特点、常用句型等，在第十四单元，介绍了美国注册护士考试的概况等。第三部分为附录，提供常用护理词汇、参考阅读文献等。本书实用性强，遵循精讲多练的原则，融理论与实践于一体，对广大护理专业学生及护理工作者极具指导性。

本书题材广泛、内容丰富、可读性强，课文均选自相关护理文献资料，每单元文章都编有注解、常用词汇和练习。同时教材的内容新颖，实用性强，书中部分内容曾在医学院护理专业学生及在职护士英语培训班中使用，取得较好效果。经过教学实践，对原有章节结构、内容和文体进一步精选提炼，充实了大量新内容，使本书更为完善。参与编写的老师具有一定的护理专业英语教学经验，并在教学过程中不断修改和完善，在此对她们的辛勤劳动表示衷心感谢；同时我们参考了国内外医学及护理英语相关书籍及其内容，附在参考文献之中，在此深表感谢！

本书适合高等医药院校护理专业学生、研究生使用，同时可供从事护理临床、科研和教学的人士参考。由于水平有限和时间仓促，书中缺点和不妥之处，敬请各位专家和读者批评指正。

姜丽萍

2010 年 1 月于浙江温州

CONTENTS

Unit 1 A Brief Introduction to English Vocabulary 1
Unit 2 Roots and Combining Forms of Medical Terms 10
Unit 3 The Human Body 23
Unit 4 The Respiratory System 31
Unit 5 The Circulatory System 45
Unit 6 The Digestive System 58
Unit 7 The Nervous System 71
Unit 8 The Muscular and Skeletal System 84
Unit 9 The Urinary System 98
Unit 10 The Genital System 112
Unit 11 The Endocrine System 130
Unit 12 The Medical System 143
Unit 13 Writing(医学论文写作) 158
Unit 14 Introduction of CGFNS Examination 171

Appendix 1 Commonly Used Words and Phrases 177
Appendix 2 Idioms: Part of the Body, Colloquial English & Phrasal Verbs 184
Appendix 3 Reading: A Nursing Paper 210

References 230

Unit 1 A Brief Introduction to English Vocabulary

Ⅰ. Brief History of English Language

• Indo-European and Germanic Influences

English belongs to the Indo-European family of languages, a very broad language family including most of the European languages spoken today. The influence of the original Indo-European language on English language can still be seen today even though there exists no written record of it. The word for father, for example, is *vater* in German, *pater* in Greek, *pedar* in Persian, *pater* in Latin, and *pitr* in Sanskrit. These words are all cognates, words that are related to each other by descent from a common source. Of all the different branches in Indo-European family, two are of paramount importance, the Germanic and the Romance. English is in the Germanic group of languages.

• Old English(450—1100)

In the fifth and sixth centuries, the Angles, Saxons, and Jutes from northern Germany, Denmark and northern Holland invaded the British Isles and began to populate those areas. These invaders, known as the Anglo-Saxons, pushed the original, Celtic-speaking inhabitants out of what is now England into Scotland, Wales, Cornwall, and Ireland, leaving behind a few Celtic words. The language they spoke, Anglo-Saxon, was mutually intelligible and at some point developed into what we know as Old English.

About half of the most commonly used words in modern English have Old English roots. Words like *water*, *stone*, *foot*, *fire*, *sheep* and *strong*, derive from Old English roots.

• The Norman Conquest and Middle English(1100—1500)

William the Conqueror, the Duke of Normandy, subsequently King William Ⅰ, invaded and conquered England and the Anglo-Saxons in 1066. The new overlords spoke a dialect of Old French known as Anglo-Norman. The Normans were also of Germanic stock and Anglo-Norman was a French dialect that had considerable Germanic influences in addition to the basic Latin roots.

Prior to the Norman Conquest, Latin had had only a minor influence on the English language, but now there was a wholesale infusion of Romance (Anglo-

Norman) words.

The influence of the Normans, found in almost every domain, from government and law to art and literature, can be illustrated by looking at two words, *beef* and *cow*. *Beef*, commonly eaten by the aristocracy, derived from the Anglo-Norman, while the Anglo-Saxon commoners, who tended the cattle, retained the Germanic *cow*. Many legal terms, such as *indict*, *jury*, and *verdict* have Anglo-Norman roots because the Normans ran the courts. This split, where words commonly used by the aristocracy have Romantic roots and words frequently used by the Anglo-Saxon commoners have Germanic roots, can be seen in many instances. Other words borrowed from French include *pork*, *govern*, *administer*, *beauty*, *music*, *painting*, *colour*, *champagne*, *fashion*, etc.

This mixture of the two languages came to be known as Middle English. The most famous example of Middle English is *Chaucer's Canterbury Tales*. Unlike Old English, Middle English can be read, though with difficulty, by modern English-Speaking people. The late 14th century witnessed the beginning of a general movement to reinstate the English language in official contexts. By 1362, the linguistic division between the nobility and the commoners was largely over. In that year, *the Statute of Pleading* was adopted, which made English the language of the courts and since then, it began to be used in Parliament. The Middle English period came to a close around 1500 with the rise of Modern English.

- **Early Modern English(1500—1800)**

The next wave of innovation in English came with the Renaissance. The revival of classical scholarship brought many classical Latin and Greek words into the language. From Greek, Early Modern English received words such as *grammar*, *logic*, *arithmetic*, *geometry*, *astronomy*, and *music*.

The most famous person to write in English in this period was William Shakespeare. Many familiar words and phrases were coined or first recorded by Shakespeare. *One fell swoop*, *vanish into thin air*, *flesh and blood*, and *A rose by any other name would smell as sweet* are all Shakespeare's. Words he left to the language include *critical*, *leapfrog*, *majestic*, *dwindle*, *pedant*, to mention but only a few.

Two other major factors influenced the language and served to separate Middle and Modern English. The first was the Great Vowel Shift, a massive sound change affecting the long vowels of English during the 15th century to the 18th century. Long vowel sounds began to be made higher in the mouth and the letter "*e*" at the end of a word became silent. Chaucer's *Lyf* pronounced "*leef*" got to be pronounced "*life*". In Middle English *name* was pronounced "*nam-a*", *five* was pronounced as "*feef*", and *down* was pronounced "*doon*".

The last major factor in the development of Modern English was the advent of the printing press. William Caxton brought the printing press to English in 1476. Books became cheaper and as a result, literacy became more common. Publishing for the masses

became a profitable enterprise, and works in English, as opposed to Latin, became more common. Finally, the printing press bought standardization to English. The dialect of London, where most publishing houses were located, became the standard English. Spelling and grammar became fixed.

• Late Modern English(1800—Present)

The principal distinction between Early Modern English and Late Modern English lies in vocabulary. Pronunciation, grammar, and spelling are largely the same, but Late Modern English has many more words. These words are the result of two historical factors. The first is the Industrial Revolution and the rise of the technological society. This necessitated new words for things and ideas that had not existed before. The second is the British Empire. At its height, Britain ruled one quarter of the earth's surface and English adopted many foreign words and made them its own.

The industrial and scientific revolutions created a need for neologisms to describe the new creations and discoveries. For this reason, English relied heavily on Latin and Greek. Words like *oxygen*, *protein*, *nuclear*, and *vaccine* did not exist in the classical languages, but they were created from Latin and Greek roots. Such neologisms were not exclusively created from classical roots, though. English roots were used for such terms as *horsepower*, *airplane*, and *typewriter*. This burst of neologism continues today, perhaps most visible in the field of electronics and computer. *Byte*, *cyber-*, *bios*, *hard-drive*, and *microchip* are good cases in point.

In addition, the rise of the British Empire and the growth of global trade served not only to introduce English to the world but to take words into English. Hindi and the other languages of the Indian subcontinent provided many words, such as *pundit*, *shampoo*, and *pajama*. Virtually every language on the earth has contributed to the development of English, from Finnish (*sauna*) and Japanese (*tycoon*) to the vast contributions of French and Latin.

Finally, the 20th century saw two world wars, and the military influence on the language during the latter half of this century has been great. Before the Great War, military slangs existed, but with the exception of nautical terms, these slangs rarely influenced Standard English. During the mid-20th century, however, military slangs entered the language like never before. *Blockbuster*, *nose dive*, *camouflage*, *radar*, *roadblock*, *spearhead*, and *landing strip* are all military terms that made their way into Standard English.

Ⅱ. Characteristics of Medical Terms

• Origin of Medical Terms

Based on their origin, medical terms can be divided into two large categories, namely, native and borrowed. Native words are those that derive from Old English. Borrowed words or loan words are so called because they are taken from other languages. Except a very small portion of medical vocabulary derived from Old English, medical

terms are largely based upon Greek, Latin and French vocabulary, of which Greek and Latin are the most productive source of medical terminology. German, Italian, Spanish and other languages have contributed some words to medical terminology as well.

Words Evolving from Old English

Old English is believed to have essentially developed from the dialect spoken by the Anglo-Saxons. Most medical words from Old English denote anatomic structures, organs, substances, and basic concepts of human activities. In their course of evolvement, changes, more or less, have taken place concerning pronunciation (phonological), spelling (morphologic) and meaning (semantic).

Anatomic Words: *ankle*, *bladder*, *chest*, *ear*, *eye*, *foot*, *gum*, *hair*, *hand*, *knee*, *lip*, *liver*, *lung*, *neck*, *organ*, *throat*, *tongue*, etc.

Words Denoting Concepts: *ache* (*v.*), *blind* (*adj.*), *breath*, *bruise*, *cold*, *fever*, *heal*, *mind* (*n.*), etc.

Words Originating from Greek: *anorexia*, *colon*, *coma*, *diagnosis*, *dyspeptic*, *glaucoma*, *metastasis*, *necrosis*, *paralysis*, *pneumonia*, *psychology*, etc.

Words Borrowed from French: *hemikrania*, *hospital*, *faint* (*adj.*), *jaundice*, *doctor*, *benign*, *disease*, *embolism*, *anatomy*, *artery*, *ambulance*, *antibiotic*, *chronic*, *lymph*, *malaise*, *pathology*, *surgeon*, *palpitation*, *prostate*, *rehabilitation*, etc.

Words Borrowed from German: *aspirin*, *biology*, *chemotherapy*, *chromosome*, *gene*; *leukemia*, *neuron*, *psychoanalysis*, etc.

Words Borrowed from Other Languages:

Italian: *influenza*, *malaria*

Spanish: *mosquito*, *quinine*

Direct Coinage: *acupuncture*, *antacid*.

- **Pronunciation of Medical Terms**

Many people may find medical terms difficult to pronounce. This can be attributed to the fact that a large proportion of medical terms are loan words. Most of such words have been adapted to modern English in terms of spelling and pronunciation. Some, though a small number, still keep their original characteristics, causing variation in their pronunciation.

Pronunciation of Some Individual Letters

c is pronounced [k] before *a*, *o*, *u*, as in *cardiac*, *carcinoma*, *leucocyte*, and [s] before *e*, *i*, *y*, as in *placenta*, *emergency*.

g is pronounced [g] before *a*, *o*, *u* as in *gastral*, *anticoagulant*, and [ʤ] before *e*, *i*, *y*, as in *emergency*, *analgesia*.

Initial **x** is pronounced [z] as in *xacorin*, *xalogen* and *xanthocyanopsia* while in other places pronounced [ks] as in *anthrax* and *axilla*.

Pronunciation of Consonant Combinations

ch, **ph** and **rh** are three consonant combinations. They appear in a word as a unit and their pronunciations seem to have nothing to do with the individual constant.

ch combination is pronounced [ʧ] as in *choke* and *chest*, but mostly [k] as in *chromosome*, *chronic* and *cholecystitis*.

ph is usually pronounced [f] as in *phobia* and *pharmacy*.

rh is pronounced [r] as in, *rhinal*, and *rhinalgia*.

Pronunciation of Double Consonants

At the beginning of a word, the first consonant of double constants, including **cn**, **gn**, **mn**, **pn**, **ps**, and **pt**, is silent. However, the two consonants are pronounced if the pair appears in the middle of a word.

Appearing in the initial position of a word, **pn** are pronounced [n] as in *pneumonia*. In *apnea*, they are pronounced [pn].

Initial **ps** is pronounced [s] as in *pseudo*. Appearing in the middle of a word, they are pronounced [ps] as in *pselaphesia*.

- **Plural Forms of Medical Terms**

Medical words can be divided into several categories based on their number forms, singular or plural. Some are invariably singular, especially nouns denoting diseases, even though some of them end with *-s*, such as *arrhythmia*, *hemophilia*, *bronchitis*, *diabetes*, *measles*, *mumps*, *rickets*. Some are variables and their plural forms are formed by adding *-(e)s*, for example, *nerve*, *lung*, *muscle*, etc. Some borrowed words have irregular plural forms. A lot of nouns evolving from Greek or Latin fall into this category. They mostly take their original plural forms, although plurals of some words are formed by adding *-(e)s* to the singular form. Special attention should be paid to such words when they are used in plural forms.

Plurals of words with Latin endings.

Endings		Examples	
singular	plural	singular	plural
-a	*-ae*	*pleura*	*pleurae*
		vertebra	*vertebrae*
-um	*-a*	*medium*	*media*
		bacterium	*bacteria*
		ovum	*oval*
-us	*-i*	*bacillus*	*bacilli*
		bronchus	*bronchi*
		thrombus	*thrombi*
-ex	*-ices / -es*	*index*	*indices / indies*
-is	*-es*	*analysis*	*analyses*
		diagnosis	*diagnoses*
-on	*-a*	*phenomenon*	*phenomena*
		ganglion	*ganglia*

• Synonymous Phenomenon of Medical Terms

As has been discussed above, medical terms come from different origins, including Old English, Latin, Greek, French and other languages. One result of such diversity in origin is that different elements or even words are used to refer to the same concept, thing, or idea. Overlapping in reference is very common in medical terminology. For example, the word *body* is derived from old English *bodig*, originally meaning "*cask*". Later, English borrowed Latin *corpus* and other words were formed on it, including *corporal*, *corpuscle*, and *corpse*. From Greek, English borrowed *soma* denoting "*body*", and it is used as a forming element in a number of related words like *somatic*, *somatocyte*, *somatology*, and *somatoscopy*. Another good case in point is those denoting "*heart*". *Heart* comes from Old English *heorte*. From Latin, English borrowed *cor* (*heart*), thus had *core* and *cordial*; from Greek *cardia* (*kardia* in Greek), thus *cardiology*, *cardiac*, *cardiovascular*, and *cardiocentesis*. The following are, though not exhaustive, a list of the synonymous word-building elements of different origins.

Referent	Latin Origin	Greek Origin
body	corpus	soma
	corpuscle	somatocyte
bowel	intestine	entero
	intestinal	enteron
breath	respire	pneuma
fat	adip-	lipo-
	adipoid	lipodystrophy
heart	cor-	cardia-
joint	artic-	arthr-
	articulation	arthrocele
kidney	ren-	nephro-
	renal	nephritis
red	rub-	erythro-
	rubeosis	erythrocatalysis
skin	cutis-	derma-
	subcutaneous	epidermis
tongue	lingua-	glossa-
	lingual	glossal
vessel	vas-	angio-
	vascular	angiology
woman	fem-	gyn-
	female	gyn(a)ecology

It is also worth noticing that common usage has shortened many words but these words should be regarded as informal. for example. *leukopenia* is used to refer to *leukocytopenia* and *polio* to *poliomyelitis*.

Ⅲ. Word-formation in Medical Terminology

Medical terms are largely composed of the building elements, namely, roots, prefixes, suffixes and existing words. Generally, we recognize seven commonly used processes of word-formation in medical language. They are affixation, composition, conversion, blending, backformation, clipping, and acronym.

• Affixation(词缀法)

Affixation refers to formation of words by means of affixes (prefix and suffix). It includes prefixation and suffixation. Prefixation is a morphological process whereby a prefix is attached to the front of a base (root or word).

Usually, prefixation tends to be semantically oriented, that is, the process adds new meanings to a base without changing its part of speech. For example, *autograft*, *isograft*, *allograft* (*homograft*) and *xenograft* (*heterograft*) all have the same root *graft* but denote grafts of different types because of their prefixes.

Suffixation is a morphological process where a suffix is attached to the end of a base. Unlike prefixes, suffixes are basically class-changing. Hence, suffixation tends to change the part of speech of a word. For example, *immune*, *immunity*, *immunize* and *immunization* have the same basic meaning, all related to "immunity" of an organism, but belong to different word classes.

When two bases are combined or a suffix is attached to a base, if there is no vowel to join the two forms, a vowel called the combining vowel is added. The most commonly used combining vowel is *o*, with *i* and *a* coming second.

For example, the term HEMATOLOGY is divided into three parts:

HEMAT-O-LOGY

root-combining-suffix

(blood) vowel (study of)

In Unit 2, we'll learn more about the roots and combining forms of medical terms.

• Composition(合成法)

Composition is a word-forming process by joining two or more words. A word made in this way is called a compound word. There are three types of compounds based on spelling features. The first type is open compound. They are so called because an open compound is made up of two or more words written separately, such as *heart failure*, *bone growth*, *sleeping sickness*, *brain death*, *birth control*, *whooping cough* and *goose flesh*. A hyphenated compound consists of two or more words connected by a hyphen, such as *high-resolution*, *host-specific*, *fat-free*, *bottle-feed* and *graft-versus-host*. A solid compound consists of two words written as one word such as *windpipe*, *sleepwalk*,

overweight and *nosebleed*.

In medical language, a special type of process of composition, by means of which neoclassical compounds are made, deserves much attention because it plays an increasingly important role in forming new medical words. Neoclassical compounds refer to those coined from elements of classical languages (Latin and Greek). Those words are neither classical Latin nor Greek. Rather, they are formed by putting together elements originating from those classic languages. Most roots and compound suffixes have been very active and productive in this word-forming process. Such words as *biocide*, *cloning*, *bio-science*, *psychanalysis*, *biophysics*, *chemotherapy* and *an open-heart surgery* are all neoclassical compounds.

• Conversion(转类法)

Conversion, very productive in forming new words, is a word-forming process whereby a word is adapted or converted to a new class without any change of form. For example, *e-mail* was first used as a noun made from "electronic mail" as in "I sent you an e-mail." However, it is now, more often than not, used as a verb and an adjective as in "I e-mailed you yesterday." and "Can I have your e-mail address in case I need to e-mail you." In medical language, a good case in point is *stent*. It is originally a noun named after the English dentist, Charles R. Stent (1845—1901), referring to "1. a device used to support a bodily orifice or cavity during skin grafting or to immobilize a skin graft following placement; 2. a slender thread, rod, or catheter inserted into a tubular structure, such as a blood vessel, to provide support during or after anastomosis." It is now converted to a verb as in "Medtronic offers both stented and stentless tissue valves." and "A new gamma radiation treatment intended to prevent stented arteries from renarrowing was approved by the FDA last year for widespread use." Other words made from conversion include *love* (*v.*>*n.*), *taste*(*v.*>*n.*), *smell* (*v.*>*n.*), *skin*(*n.*>*v.*), *plaster*(*n.*>*v.*), *mask*(*n.*>*v.*), *faint* (*adj.*>*v.*), *empty* (*adj.*>*v.*).

e.g. We put some ointment and a **bandage** on his knee. (*n.*)

I **bandaged** the leg up and gave her aspirin for the pain. (*v.*)

• Blending(拼缀法)

A blend is formed by blending parts of two words (or more). In this process, three major patterns are defined, namely, part + part, whole +part, and part + whole.

part + part	**genome**	(**gene**+chromo**some**)
whole + part	**breathalyzer**	(**breath**+**analyzer**)
part + whole	**medicaid**	(**medical**+**aid**)
	medicare	(**medical**+**care**)
	chemotherapy	(**chemical**+**therapy**)

• Backformation(逆成法)

It is a usual process to form nouns from existing verbs by adding suffixes such as *-or*, *-er* or *-ar*. For instance, *teacher* is made from *teach* and suffix *-er*. Back formation

refers to the reversed process. That is, verbs are made from existing nouns by deleting seeming or imagined affixes. For example, *chain-smoke* came from *chain-smoker*, and *automate* from *automation*. Other backformed medical terms include *diagnose* from *diagnosis*, *ovulate* from *ovulation*, *palpitate* from *palpitation*, *injure* from *injury*, *contracept* from *contraception*, *transcript* from *transcription*, and *psychoanalyze* from *psychoanalysis*.

However, exceptions that involve other part of speech are not rare, for example, *paramedic* from *paramedical*, *pathogen* from *pathogenic*, and *gloom* from *gloomy*.

• Clipping(截短法)

Clipping, also called shortening, refers to the process whereby a word is shortened by clipping off parts of the word without changes in its meaning and word class. For example, *exam* is the shortened form of *examination*, *flu* of *influenza*, *lab* of *laboratory*, *polio* of *poliomyelitis*, *psych* of *psychology*, and *ad* of *advertisement*.

• Acronyms(首字母缩略法)

Acronyms are very common in medical literature. An acronym is a word coined from the initial letters of a group of words. They have been very active and have been increasing in number especially in science and technology. A large number of acronyms have been created in medical literature, such as CT (computerized tomography), RBC (red blood cell), ECG(electrocardiogram), BMR(basal metabolic rate), B.P(blood pressure), G.P(general practitioner), RN(registered nurse), etc.

Some acronyms are not made of the initial letters of individual words of a compound term. Rather, they are mostly composed of the initial letter of the word plus the first letter of other components of the same word, such as TB (tuberculosis), OD (overdose), IV (intravenous), NP (neuropsychiatry), etc.

Attention should be given to those not derived from Modern English but from Latin or Greek. The following are the most commonly used acronyms of this kind.

a.c. (ante cibum = before meal)

p.c. (post cibum = after meal)

b.i.d. (bis in die = twice a day)

t.i.d. (ter in die = three times a day)

Unit 2 Roots and Combining Forms of Medical Terms

Medical terminology is a vocabulary for accurately describing the human body and associated components, conditions, processes and procedures in a science-based manner. This systematic approach to word building and term comprehension is based on the concepts of word roots, prefixes, and suffixes. The root, the core in a word, provides the fundamental meaning of that word. Other semantic elements of a medical term will be supplied by prefixes and suffixes.

Roots

A root is what remains when all added elements in a word have been removed, so a root can stand alone and has a meaning. It can also be combined with another building block to form a meaningful medical word. For example, *derm* is a root denoting "skin". It can stand alone as a word referring to "*skin*". It can also produce a lot of other words in combination with other building blocks, such as *epidermis*, *dermis*, *dermatology*, *dermatitis*, *dermatosis*, *dermatoid*, etc. Combining vowels are often used when a root is combined with a suffix or another root. A root with combining vowel(s) is called **combining form**. Besides "o", "i" and "a" are also used as combining vowels.

aden/o- (Gr. adēn) gland

adenocarcinoma [ˈædinəuˌkɑːsiˈnəumə] a malignant tumor originating in glandular tissue

angi/o- (Gr. aggeĭon) vessel

angioplasty [ˈændʒiːplæsti:] the surgical repair of a blood vessel

cardi/o- (Gr. kardiā) heart

cerebr/o- (L.) cerebrum

cerebrovascular [ˌseribrəuˈvæskjulə] pertaining to the blood vessels of the brain

gastr/o- (Gr. gastēr) stomach

hepat/o- (Gr. hēpatos) liver

laryng/o- (L. nāsus) larynx, voice box

lymph/o- (L. lympha(water)) lymph

lymphocyte [ˈlimfəsait] any of the nearly colorless cells formed in lymphoid issue

mast/o- (Gr. mastos) breast

mastocarcinoma [ˌmæstəukɑːsiˈnəumə] carcinoma of the breast

my/o- (Gr. mys) muscle

myocarditis [ˌmaiəukɑːˈdaitis] inflammation of the myocardium

nephr/o- (Gr. nephros) kidney

nephromegaly [ˌnefrəuˈmegəli] enlargement of the kidney

neur/o- (Gr. neuron) nerve

neuritis [nuˈraitis] inflammatin of a nerve

ophthalm/o- (Gr. ophthalmos) eye

ophthalmoneuritis [ɔfθælməˌnjuəˈraitis] inflammation of the ophthalmic nerve

opt/o- (Gr. optos) visible; vision or sight

oste/o- (Gr. osteon) bone

osteomalacia [ɔstiəuməˈleiʃ(i)ə] a condition characterized by a softening of the bones with accompanying pain and weakness

pleur/o- (Gr. pleurá) pleura

pleurodynia [ˌpluərəuˈdiniə] pain in the pleural cavity

ren/o- (L. renis) kidney

renopathy [riːˈnɔpəθi] a disease or an abnormality of the kidney; also called nephropathy

rhin/o- (Gr. rhís, rhinós) nose

rhinorrhagia [rainəˈreidʒiə] nosebleed

thorac/o- (Gr. thrombos) thorax or chest

ur/o-, urin/o- (Gr. ouron) urine

uremia [juəˈriːmiə] a toxic condition in which there is retention in the bloodstream of waste products normally excreted in the urine

Prefixes

A prefix is a letter or a letter combination placed before a word or a combining form to alter or modify the basic meaning of the word. A larger proportion of prefixes describe spatial relationship. Others denote concepts, and still others describe physical properties or qualities of objects or concepts.

Among prefixes denoting spatial relationships, some make pairs to show opposite relationships such as ab-(away from) and ad-(toward), and others are unpaired.

ante- (L.) forward, before

antebrachium [ˌantiˈbreikjim] the part of the upper limb of the body between the elbow and the wrist

antecardium [ˌantiˈkɑːdiəm] the upper middle region of the abdomen

retro- (L. retró) backward, or located behind

retrocervical [ˌretrəuˈsəːvikəl] posterior to the cervix uter

retrograde [ˈretrəˌgreid] moving backward or against the usual direction of flow

anter/o- (L.) farther forward

anterior [æn'tiəriə] situated in front of or in the forward part of an organ

poster/o- (L.) farther back

posterior [pɔ'stiəri:ə] situated in back of, or in the back part of, a structure

extra/o- (L.) outside of, beyond

extracellular [ˌekstrə'seljulə] outside a cell or cells

extrovert ['ekstrəˌvə:t] a person whose interest is turned outward to the external world

intra/o- (L.) inside, within

intracellular [ˌintrə'seljələ] within a cell

introvert ['intrəˌvə:t] one whose thoughts and feelings are directed toward oneself

infer- (L.) lower

inferior [in'fiəriə] located beneath or directed downward

super- (L.) above, over, higher

superior [sju'piəriə] located higher than another; upper

infra- (L.) inferior to, below, or beneath

infracostal [ˌinfrə'kɔstəl] inferior to a rib or to all the ribs

supra- (L.) above, over

supracostal [ˌsju:prə'kɔstəl] superior to or over a rib or ribs

pro- (Gr. pró-) before, forward

prostate ['prɔsteit] a gland in the male which surrounds the neck of the bladder and the urethra

ana- (Gr. anú-) up, back

anabolism [ə'næbəlizm] any constructive metabolic process by which organisms convert substances into other components of the organism's chemical architecture

cata- (Gr. catú-) down, down from

catabolism [kə'tæbəlizəm] any destructive metabolic process by which organisms convert substances into excreted compounds

hyper- (Gr. huper-) over, above, beyond; excessive

hypercalcemia [ˌhaipəˌkæl'si:miə] an excess of calcium in the blood

hypo- (Gr. hup/ó) beneath, under

hypodermis [ˌhaipəu'də:mis] subcutaneous tissue

endo- (Gr.éndo-) inside, inner

exo- (Gr.éxō-) out of, outside

co- (L.) with, together

coenzyme [kəu'enzaim] an organic nonprotein molecule that binds with apoenzyme to form the active **enzyme**, **holoenzyme**

contra- (L.) against, the opposite side or direction

de- (L. dē-) down from, away from, off

decomposition [ˌdi:kɔmpə'ziʃən] breakdown or decay of organic materials

dif- (L. form of **dis-** before f) apart, separate