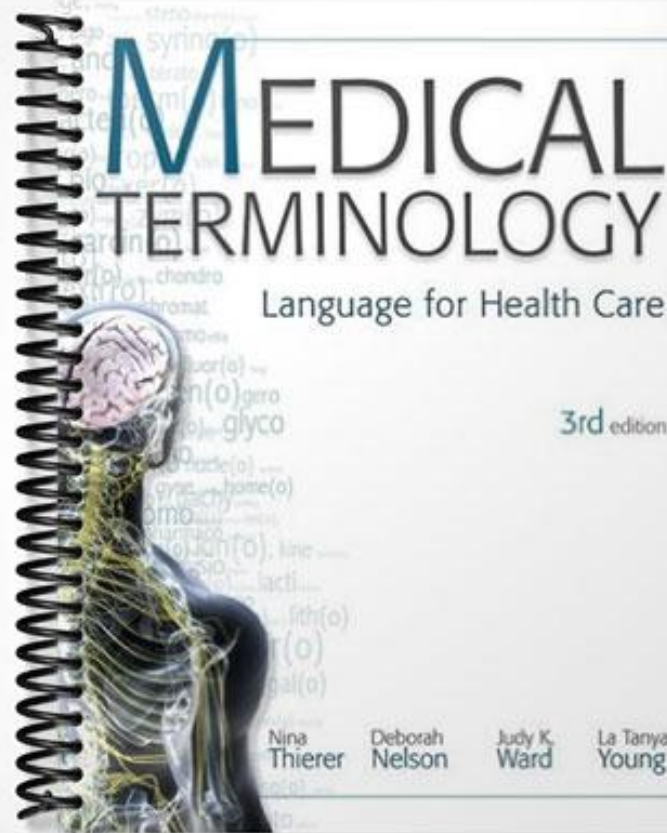


**SOLUTIONS MANUAL**



# Chapter 2

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## *Prefixes and Suffixes in Medical Terms*

### Teaching Suggestions

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Chapters 1, 2, and 3 introduce the word parts that form many of the medical terms now in use. Chapter 1 introduces common medical combining forms. These include the combining forms that are not specific to individual body systems (those combining forms are covered in Chapter 3). Chapter 2 introduces common prefixes and suffixes that are used in medical terminology. In this chapter, students must begin the process of memorizing word parts that they will see in many terms. Once they learn the word parts, they will be able to understand many terms without having seen them earlier. The key to such memorization is repetition. There are a number of ways students can repeat the word parts without just reading them over and over again.

# CHAPTER

# 2

## Prefixes and Suffixes in Medical Terms

After studying this chapter, you will be able to:

- 2.1 Define common medical prefixes
- 2.2 Define common medical suffixes
- 2.3 Describe how word parts are put together to form words

### Medical Prefixes and Suffixes

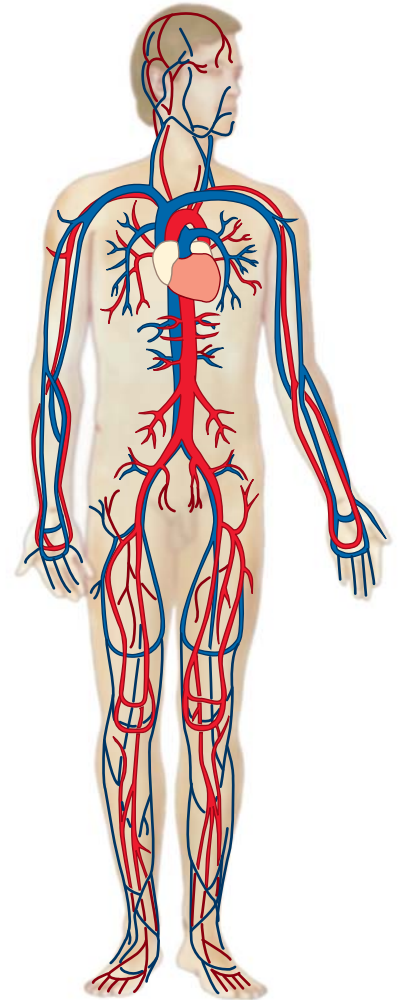
In Chapter 1, you learned about the four basic word parts—word roots, combining forms, prefixes, and suffixes, and you learned the important medical roots and combining forms. In this chapter, you learn the important medical prefixes and suffixes and how word parts are put together to form medical terms.

#### Prefixes

Prefixes are word parts that modify the meaning of the word or word root. They attach to the beginning of words. Prefixes tend to indicate size, quantity, position, presence of, and location. When trying to understand a word with a prefix, you can take apart the word, find the meaning of each part, and then determine the meaning of the entire word. For example, terms for paralysis include *paraplegia*, *hemiplegia*, and *quadriplegia*. By taking apart the three terms, you can deduce the meaning of each of these three medical terms.

- para- = abnormal; involving two parts + -plegia = paralysis
- hemi- = half
- quadri- = four

Sometimes you need to reason out a meaning that is not quite the prefix plus the root but is a meaning that makes sense. *Paraplegia* is paralysis of the two lower limbs; *hemiplegia* is paralysis of one side; and *quadriplegia* is paralysis of all four limbs. The meaning “limbs” is not contained specifically in the prefix but it is understood from the combination of the numbers in the prefix’s meaning and the root meaning paralysis—so “two paralysis” is paralysis of the two lower limbs (since you cannot have paralysis of just the upper limbs).



**PowerPoint**  
Show PowerPoint slides 2-10  
(Introduction, Forming Medical  
Terms, and Prefixes)

To learn more about paralysis and what is being done to cure it, go to the National Spinal Cord Injury Association’s Web site ([www.spinalcord.org](http://www.spinalcord.org)).

PREFIXES	MEANING	EXAMPLE
a-	without	<i>asepsis</i> [ā-SĚP-sīs], without living organisms
ab-, abs-	away from	<i>abduct</i> [āb-DŮKT], to draw away from a position
ad-	toward, to	<i>adduct</i> [ā-DŮKT], to draw toward the body, as a limb
ambi-	both, around	<i>ambidextrous</i> [ām-bē-DĚKS-trūs], having ability on both the right and left sides (said of the hands)
an-	without	<i>anencephalic</i> [ān-ěn-sě-FĀL-ĭk], without a brain
ana-	up, toward	<i>anaphylactic</i> [ĀN-ā-fĭ-LĀK-tĭk], exaggerated reaction to an antigen or toxin
ante-	before	<i>antemortem</i> [ĀN-tē-mōr-tēm], before death
anti-	against	<i>antibacterial</i> [ĀN-tē-bāk-TĚR-ē-āl], preventing the growth of bacteria
apo-	derived, separate	<i>apobiosis</i> [āp-ō-bĭ-Ō-sīs], death of a part of a living organism
aut(o)-	self	<i>autoimmune</i> [āw-tō-ĭ-MYŪN], against an individual's own tissue
bi-	twice, double	<i>biparous</i> [BĪP-ā-rūs], bearing two young
brachy-	short	<i>brachyoesophagus</i> [BRĀK-ē-ě-sōf-ā-gūs], abnormally short esophagus
brady-	slow	<i>bradycardia</i> [brād-ē-KĀR-dē-ā], abnormally slow heartbeat
cata-	down	<i>cataplexy</i> [KĀT-ā-plěk-sě], sudden extreme muscle weakness
circum-	around	<i>circumoral</i> [sěr-kŭm-ŌR-āl], around the mouth
co-, col-, com-, con-, cor-	together	<i>codominant</i> [kō-DŌM-ĭ-nānt], having an equal degree of dominance (said of two genes)
contra-	against	<i>contraindicated</i> [kōn-trā-ĭn-dĭ-KĀ-těd], not recommended
de-	away from	<i>demyelination</i> [dē-MĪ-ě-lĭ-NĀ-shŭn], loss of myelin
di-, dif-, dir-, dis-,	not, separated	<i>disarticulation</i> [dĭs-ār-tĭk-yŭ-LĀ-shŭn], amputation of a joint
dia-	through	<i>diaplacental</i> [dĭ-ā-plā-SĚN-tāl], passing through the placenta

PREFIXES	MEANING	EXAMPLE
dys-	abnormal; difficult	<i>dysfunctional</i> [dĭs-FŪNK-shŭn-ăł], functioning abnormally
ect(o)-	outside	<i>ectopic</i> [ĕk-TŎP-ĭk], occurring outside the normal place, as a pregnancy occurring outside of the uterus
end(o)-	within	<i>endoabdominal</i> [ĔN-dŏ-ăb-DŎM-ĭ-năł], within the abdomen
epi-	over	<i>epicondyle</i> [ĕp-ĭ-KŎN-dĭł], projection over or near the condyle
eu-	well, good, normal	<i>eupepsia</i> [yŭ-PĔP-sĕ-ă], normal digestion
ex-	out of, away from	<i>exhale</i> [ĔKS-hăł], breathe out
exo-	external, on the outside	<i>exogenous</i> [ĕks-ŎJ-ĕ-nŭs], produced outside of the organism
extra-	without, outside of	<i>extracorporeal</i> [ĕks-tră-kŏr-PŎ-rĕ-ăł], outside of the body
hemi-	half	<i>hemiplegia</i> [hĕm-ĭ-PLĔ-jĕ-ă], paralysis on one side of the body
hyper-	above normal; overly	<i>hyperactive</i> [hĭ-pĕr-ĂK-tĭv], abnormally restless and inattentive
hypo-	below normal	<i>hypoglycemia</i> [hĭ-pŏ-glĭ-SĔ-mĕ-ă], low blood sugar
infra-	positioned beneath	<i>infrasternal</i> [ĭn-fră-STĔR-năł], below the sternum
inter-	between	<i>interdental</i> [ĭn-tĕr-DĔN-tăł], between the teeth
intra-	within	<i>intramuscular</i> [ĭN-tră-MŪS-kyŭ-lăr], within the substance of the muscles
iso-	equal, same	<i>isometric</i> [ĭ-sŏ-MĔT-rĭk], of the same dimensions
mal-	bad; inadequate	<i>malabsorption</i> [măł-ăb-SŎRP-shŭn], inadequate absorption
meg(a)-, megal(o)-	large	<i>megacephaly</i> [mĕg-ă-SĔF-ă-lĕ], abnormal enlargement of the head
mes(o)-	middle, median	<i>mesoderm</i> [MĔZ-ŏ-dĕrm], the middle layer of skin
meta-	after	<i>metacarpus</i> [MĔT-ă-KĂR-pŭs], bones attached to the carpus

PREFIXES	MEANING	EXAMPLE
<b>micr(o)-</b>	small, microscopic	<i>microplasia</i> [mī-krō-PLĀ-zhē-ă], stunted growth, as in dwarfism
<b>mon(o)-</b>	single	<i>monomania</i> [mōn-ō-MĀ-nē-ă], obsession with a single thought or idea
<b>multi-</b>	many	<i>multiarticular</i> [MŪL-tē-ăr-TĪK-yū-lăr], involving many joints
<b>olig(o)-</b>	few; little; scanty	<i>oligospermia</i> [ōl-ī-gō-SPĚR-mē-ă], low sperm count
<b>pan-, pant(o)-</b>	all, entire	<i>panarthritis</i> [păn-ăr-THRĪ-tīs], arthritis involving all joints
<b>par(a)-</b>	beside; abnormal; involving two parts	<i>parakinesia</i> [păr-ă-kī-NĒ-zhē-ă], motor abnormality
<b>per-</b>	through, intensely	<i>peraxillary</i> [pēr-ĂK-sī-lăr-ē], through the axilla
<b>peri-</b>	around, about, near	<i>periappendicitis</i> [PĚR-ē-ă-pēn-dī-SĪ-tīs], inflammation of the tissue surrounding the appendix
<b>pluri-</b>	several, more	<i>pluriglandular</i> [plū-rī-GLĀN-dū-lăr], of several glands
<b>poly-</b>	many	<i>polyarteritis</i> [pōl-ē-ăr-tēr-Ī-tīs], inflammation of a number of arteries
<b>post-</b>	after, following	<i>postmortem</i> [pōst-MŌR-tēm], after death
<b>pre-</b>	before	<i>prenatal</i> [prē-NĀ-tăl], before birth
<b>pro-</b>	before, forward	<i>prodrome</i> [PRŌ-drōm], a symptom or group of symptoms that occurs before a disease shows up
<b>quadra-, quadri-</b>	four	<i>quadriplegia</i> [kwăh-dri-PLĚ-jē-ă], paralysis of all four limbs
<b>re-</b>	again, backward	<i>reflux</i> [RĚ-flŭks], backward flow
<b>retro-</b>	behind, backward	<i>retroversion</i> [rē-trō-VĚR-shŭn], a turning backward, as of the uterus
<b>semi-</b>	half	<i>semicomatose</i> [sēm-ē-KŌ-mă-tōs], drowsy and inactive, but not in a full coma
<b>sub-</b>	less than, under, inferior	<i>subcutaneous</i> [süb-kyū-TĀ-nē-ŭs], beneath the skin
<b>super-</b>	more than, above, superior	<i>superacute</i> [sū-pēr-ă-KYŪT], more acute
<b>supra-</b>	above, over	<i>supramaxillary</i> [sū-pră-MĂK-sī-lăr-ē], above the maxilla

PREFIXES	MEANING	EXAMPLE
syl-, sym-, syn-, sys-	together	<i>symbiosis</i> [sĭm-bē-Ō-sĭs], mutual interdependence
tachy-	fast	<i>tachycardia</i> [TĀK-i-KAR-de-a], rapid heartbeat
trans-	across, through	<i>transocular</i> [trăns-ŌK-yū-lăr], across the eye
ultra-	beyond, excessive	<i>ultrasonic</i> [ŭl-tră-SŌN-ĭk], relating to energy waves of higher frequency than sound waves
un-	not	<i>unconscious</i> [ŭn-KŌN-shŭs], not conscious
uni-	one	<i>uniglandular</i> [yū-nĭ-GLĀN-dŭ-lăr], involving only one gland

## Suffixes

Suffixes can also be combining forms at the end of terms. In the section “Prefixes,” the example meaning paralysis, *-plegia*, is both a suffix and a combining form. It both attaches to the end of the word and carries the underlying meaning of the word such as *cardioplegia*, paralysis of the heart.

Many suffixes have several variations that can make the compound word a noun, verb, adjective, or adverb. For example:

an intense fear of closed spaces is *claustrophobia* (noun)

relating to or having such a condition is *claustrophobic* (adjective)

Some suffixes form both verbs and nouns so it may be important to look at the sentence in which it appears to determine the exact meaning. For example, *hemorrhage* can mean both “to bleed profusely” (verb) or “profuse bleeding” (noun). In the sentence, “It is possible to hemorrhage profusely from certain injuries,” *hemorrhage* is a verb. In the sentence, “The hemorrhage was caused by an injury to his leg,” *hemorrhage* is a noun.

### PowerPoint

Show PowerPoint slides 11-19  
(Suffixes)

### Building Vocabulary

Have each student gradually build a flash card collection for the prefixes, suffixes, and combining forms in Chapters 1 and 2. Since there are so many, you may want to have each student choose only those forms that seem unfamiliar to them. Alternatively, you may want to assign them a certain number of prefixes, suffixes, and combining forms to make flash cards for each day. Each flash card should show the prefix, suffix, or combining form on the front and have the definition and at least two examples on the back.

SUFFIXES	MEANING	EXAMPLE
-ad	toward	<i>cephalad</i> [SĔF-ă-lăd], toward the head
-algia	pain	<i>neuralgia</i> [nū-RĀL-jē-ă], nerve pain
-asthenia	weakness	<i>neurasthenia</i> [nūr-ăs-THĒ-nē-ă], condition with vague symptoms, such as weakness
-blast	immature, forming	<i>astroblast</i> [ĀS-trō-blăst], immature cell
-cele	hernia	<i>cystocele</i> [SĪS-tō-sēl], hernia of the urinary bladder
-cidal	destroying, killing	<i>suicidal</i> [sū-ĭ-SĪD-ăl], likely to kill oneself
-cide	destroying, killing	<i>suicide</i> [SŪ-ĭ-sĭd], killing of oneself; <i>bacteriocide</i> [băk-TĒR-ē-ō-sĭd], agent that destroys bacteria

SUFFIXES	MEANING	EXAMPLE
-clasis	breaking	<i>osteoclasia</i> [ŎS-tē-ŎK-lă-sĭs], intentional breaking of a bone
-clast	breaking instrument	<i>osteoclast</i> [ŎS-tē-ŏ-klăst], instrument used in osteoclasia
-crine	secreting	<i>endocrine</i> [ĚN-dŏ-krĭn], gland that secretes hormones into the bloodstream
-crit	separate	<i>hematocrit</i> [HĚ-mă-tŏ-krĭt, HĚM-ă-to-krĭt], percentage of volume of a blood sample that is composed of cells
-cyte	cell	<i>thrombocyte</i> [THRŎM-bŏ-sĭt], blood platelet
-cytosis	condition of cells	<i>erythrocytosis</i> [Ě-RĬTH-rŏ-sĭ-tŏ-sĭs], condition with an abnormal number of red blood cells in the blood
-derma	skin	<i>scleroderma</i> [sklĕr-ŏ-DĚR-mă], hardening of the skin
-desis	binding	<i>arthrodesis</i> [ăr-THRŎD-ĕ-sĭs, är-thrŏ-DE-sĭs], stiffening of a joint
-dynia	pain	<i>neurodynia</i> [nŭr-ŏ-DĬN-ĕ-ă], nerve pain
-ectasia	expansion; dilation	<i>neurectasia</i> [nŭr-ĕk-TĂ-zhĕ-ă], operation with dilation of a nerve
-ectasis	expanding; dilating	<i>bronchiectasis</i> [brŏng-kĕ-ĚK-tă-sĭs], condition with chronic dilation of the bronchi
-ectomy	removal of	<i>appendectomy</i> [ăp-ĕn-DEK-tŏ-mĕ], removal of the appendix
-edema	swelling	<i>lymphedema</i> [lĭmf-ĕ-DE-mă], swelling as a result of obstructed lymph nodes
-ema	condition	<i>empyema</i> [ĕm-pĭ-Ě-mă], pus in a body cavity
-emesis	vomiting	<i>hematemesis</i> [hĕ-mă-TĚM-ĕ-sĭs], vomiting of blood
-emia	blood	<i>anemia</i> [an-N-mĕ-ă], deficiency of red blood cells or hemoglobin
-emic	relating to blood	<i>uremic</i> [yŭ-RE-mĭk], having excess urea in the blood
-esthesia	sensation	<i>paresthesia</i> [păr-ĕs-THĚ-zhĕ-ă], abnormal sensation, such as tingling
-form	in the shape of	<i>uniform</i> [YŪ-nĭ-fŏrm], having the same shape throughout
-gen	producing, coming to be	<i>carcinogen</i> [kăr-SĬN-ŏ-jĕn], cancer-causing agent
-genesis	production of	<i>pathogenesis</i> [păth-ŏ-JĚN-ĕ-sĭs], production of disease
-genic	producing	<i>iatrogenic</i> [ĭ-ăt-rŏ-JĚN-ĭk], induced by treatment



SUFFIXES	MEANING	EXAMPLE
-globin	protein	<i>hemoglobin</i> [hē-mō-GLŌ-bĭn], protein of red blood cells
-globulin	protein	<i>immunoglobulin</i> [ĭm-yū-nō-GLŌB-yū-lĭn], one of certain structurally related proteins
-gram	a recording	<i>electrocardiogram</i> [e-LEK-tro-kar-de-grām], brain scan
-graph	recording instrument	<i>encephalograph</i> [ĕn-SĔF-ă-lō-grăf], instrument for measuring brain activity
-graphy	process of recording	<i>echocardiography</i> [ĔK-ō-kăr-dē-ŎG-ră-fĕ], graphic record of the electric activity of the heart
-iasis	pathological condition or state	<i>psoriasis</i> [sō-RĪ-ă-sĭs], chronic skin disease
-ic	pertaining to	<i>gastric</i> [GĂS-trĭk], relating to the stomach
-ics	treatment, practice, body of knowledge	<i>orthopedics</i> [ōr-thō-PĔ-dĭks], medical practice concerned with treatment of skeletal disorders
-ism	condition, disease, doctrine	<i>dwarfism</i> [DWŎRF-ĭzm], condition characterized by abnormally small size
-itis (pl., -itides)	inflammation	<i>nephritis</i> [nĕ-FRĪ-tĭs], kidney inflammation; <i>neuritides</i> [nū-RĪT-ĭ-dĕz], inflammations of nerves
-kinesia	movement	<i>bradykinesia</i> [brăd-ĭ-kĭn-Ē-zhĕ-ă], decrease in movement
-kinesis	movement	<i>hyperkinesis</i> [hĭ-pĕr-kĭ-NĒ-sĭs], excessive muscular movement
-lepsy	condition of	<i>cataplexy</i> [KĂT-ă-lĕp-sĕ], condition characterized by seizures of extreme rigidity
-leptic	having seizures	<i>cataleptic</i> [kăt-ă-LĔP-tĭk], person with cataplexy
-logist	one who practices	<i>dermatologist</i> [dĕr-mă-TŎL-ō-jĭst], one who practices dermatology
-logy	study, practice	<i>dermatology</i> [dĕr-mă-TŎL-ō-jĕ], study and treatment of skin disorders
-lysis	destruction of	<i>electrolysis</i> [ĕ-lĕk-TRŎL-ĭ-sĭs], permanent removal of unwanted hair
-lytic	destroying	<i>thrombolytic</i> [thrŏm-bŏ-LĪT-ĭk], dissolving a thrombus
-malacia	softening	<i>osteomalacia</i> [ŎS-tĕ-ō-mă-LĀ-shĕ-ă], gradual softening of bone
-mania	obsession	<i>monomania</i> [mŏn-ō-MĀ-nĕ-ă], obsession with one idea
-megaly	enlargement	<i>cephalomegaly</i> [SĔF-ă-lō-MĔG-ă-lĕ], abnormal enlargement of the head
-meter	measuring device	<i>ophthalmometer</i> [ŏf-thăl-MŎM-ĕ-tĕr], device for measuring cornea curvature

SUFFIXES	MEANING	EXAMPLE
-metry	measurement	<i>optometry</i> [öp-TÖM-ě-trē], specialty concerned with measurement of eye function
-oid	like, resembling	<i>cardioid</i> [KĀR-dē-öyd], resembling a heart
-oma (pl., -omata)	tumor, neoplasm	<i>myoma</i> (pl., <i>myomata</i> ) [mī-Ō-mă (mī-ō-MĀ-tă)], neoplasm of muscle tissue
-opia	vision	<i>diplopia</i> [ďi-PLŌ-pē-ă], double vision
-opsia	vision	<i>chloropsia</i> [klō-RŎP-sē-ă], condition of seeing objects as green
-opsy	view of	<i>biopsy</i> [BĪ-öp-sē], cutting from living tissue to be viewed
-osis (pl., -oses)	condition, state, process	<i>halitosis</i> [hăl-ĭ-TŎ-sĭs], chronic bad breath
-ostomy	opening	<i>colostomy</i> [kō-LŎS-tō-mē], surgical opening in the colon
-oxia	oxygen	<i>anoxia</i> [ăn-ŎK-sē-ă], lack of oxygen
-para	bearing	<i>primipara</i> [prĭ-MĪP-ăr-ă], woman who has given birth once
-paresis	slight paralysis	<i>monoparesis</i> [mön-ō-pă-RĒ-sĭs], paralysis of only one extremity
-parous	producing; bearing	<i>viviparous</i> [vĭ-VĪP-ă-rŭs], bearing living young
-pathy	disease	<i>osteopathy</i> [ös-tē-ŎP-ă-thē], bone disease
-penia	deficiency	<i>leukopenia</i> [lŭ-kō-PĒ-nē-ă], condition with fewer than normal white blood cells
-pepsia	digestion	<i>dyspepsia</i> [ďis-PĚP-sē-ă], impaired digestion
-pexy	fixation, usually done surgically	<i>nephropexy</i> [NĚF-rō-pĕk-sē], surgical fixation of a floating kidney
-phage, -phagia, -phagy	eating, devouring	<i>polyphagia</i> [pöl-ē-FĀ-jē-ă], excessive eating
-phasia	speaking	<i>aphasia</i> [ă-FĀ-zhē-ă], loss of or reduction in speaking ability
-pheresis	removal	<i>leukapheresis</i> [lŭ-kă-fē-RĒ-sĭs], removal of leukocytes from drawn blood
-phil	attraction; affinity for	<i>cyanophil</i> [SI-ăn-nō-fĭl], element that turns blue after staining
-philia	attraction; affinity for	<i>hemophilia</i> [hē-mō-FĪL-ē-ă], blood disorder with tendency to hemorrhage
-phobia	fear	<i>acrophobia</i> [ăk-rō-FŎ-bē-ă], fear of heights
-phonia	sound	<i>neuraphonia</i> [nŭr-ă-FŎ-nē-ă], loss of sounds
-phoresis	carrying	<i>electrophoresis</i> [ē-lĕk-trō-FŎR-ē-sĭs], movement of particles in an electric field

SUFFIXES	MEANING	EXAMPLE
-phoria	feeling; carrying	<i>euphoria</i> [yū-FÖR-ē-ă], feeling of well-being
-phrenia	of the mind	<i>schizophrenia</i> [skiz-ō-FRĚ-nē-ă, skit-sō-FRĚ-nē-ă], term for a common psychosis
-phthisis	wasting away	<i>hemophthisis</i> [hē-MÖF-thĭ-sĭs], anemia
-phylaxis	protection	<i>prophylaxis</i> [prō-fĭ-LĀK-sĭs], prevention of disease
-physis	growing	<i>epiphysis</i> [ĕ-PĪF-ĭ-sĭs], part of a long bone distinct from and growing out of the shaft
-plakia	plaque	<i>leukoplakia</i> [lū-kō-PLĀ-kē-ă], white patch on the mucous membrane
-plasia	formation	<i>dysplasia</i> [dĭs-PLĀ-zhē-ă], abnormal tissue formation
-plasm	formation	<i>protoplasm</i> [PRŌ-tō-plăzm], living matter
-plastic	forming	<i>hemoplastic</i> [hē-mō-PLĀS-tĭk], forming new blood cells
-plasty	surgical repair	<i>rhinoplasty</i> [RĪ-nō-plăs-tē], plastic surgery of the nose
-plegia	paralysis	<i>quadriplegia</i> [KWĀH-dri-PLĚ-jē-ă], paralysis of all four limbs
-plegic	one who is paralyzed	<i>quadriplegic</i> [kwăh-dri-PLĚ-jĭk], person who has quadriplegia
-pnea	breath	<i>eupnea</i> [yūp-NĚ-ă], easy, normal respiration
-poiesis	formation	<i>erythropoiesis</i> [ĕ-RĪTH-rō-pöy-Ē-sĭs], formation of red blood cells
-poietic	forming	<i>erythropoietic</i> [ĕ-RĪTH-rō-pöy-ĕt-ĭk], of the formation of red blood cells
-poietin	one that forms	<i>erythropoietin</i> [ĕ-RĪTH-rō-pöy-ĕtĭn], an acid that aids in the formation of red blood cells
-porosis	lessening in density	<i>osteoporosis</i> [ŎS-tē-ō-pō-RŌ-sĭs], lessening of bone density
-ptosis	falling down; drooping	<i>blepharoptosis</i> [blĕf-ă-RŎP-tō-sĭs], drooping eyelid
-rrhage	discharging heavily	<i>hemorrhage</i> [HĚM-ō-răj], to bleed profusely
-rrhagia	heavy discharge	<i>tracheorrhagia</i> [trā-kē-ō-RĀ-jē-ă], hemorrhage from the trachea
-rrhaphy	surgical suturing	<i>herniorrhaphy</i> [HĚR-nē-ŎR-ă-fē], surgical repair of a hernia
-rrhea	a flowing, a flux	<i>dysmenorrhea</i> [dĭs-mĕn-ŎR-ē-ă], difficult menstrual flow

SUFFIXES	MEANING	EXAMPLE
-rrhexis	rupture	<i>cardiorrhexis</i> [kär-dē-ō-RĚK-sīs], rupture of the heart wall
-schisis	splitting	<i>spondyloschisis</i> [spön-dī-LÖS-kī-sīs], failure of fusion of the vertebral arch in an embryo
-scope	instrument (especially one used for observing or measuring)	<i>microscope</i> [MĪ-krō-skōp], instrument for viewing small objects
-scopy	use of an instrument for observing	<i>microscopy</i> [mī-KRÖS-kō-pē], use of microscopes
-somnia	sleep	<i>insomnia</i> [ĭn-SÖM-nē-ă], inability to sleep
-spasm	contraction	<i>esophagospasm</i> [ĕ-SÖF-ă-gō-spăzm], spasm of the walls of the esophagus
-stalsis	contraction	<i>peristalsis</i> [pĕr-ĭ-STĀL-sīs], movement of the intestines by contraction and relaxation of its tube
-stasis	stopping; constant	<i>homeostasis</i> [HÖ-mē-ō-STĀ-sīs], state of equilibrium in the body
-stat	agent to maintain a state	<i>bacteriostat</i> [bäk-TĚR-ē-ō-stăt], agent that inhibits bacterial growth
-static	maintaining a state	<i>hemostatic</i> [hē-mō-STĀT-ĭk], stopping blood flow within a vessel
-stenosis	narrowing	<i>stenostenosis</i> [STĚN-ō-stĕ-NÖ-sīs], narrowing of the parotid duct
-stomy	opening	<i>colostomy</i> [kō-LÖS-tō-mē], surgical opening in the colon
-tome	cutting instrument, segment	<i>osteotome</i> [ÖS-tē-ō-tōm], instrument for cutting bone
-tomy	cutting operation	<i>laparotomy</i> [LĀP-ă-RÖT-ō-mē], incision in the abdomen
-trophic	nutritional	<i>atrophic</i> [ā-TRÖF-ĭk], of a wasting state, often due to malnutrition
-trophy	nutrition	<i>dystrophy</i> [DĪS-trō-fē], changes that result from inadequate nutrition
-tropia	turning	<i>esotropia</i> [ĕs-ō-TRÖ-pē-ă], crossed eyes
-tropic	turning toward	<i>neurotropic</i> [nūr-ō-TRÖP-ĭk], localizing in nerve tissue
-tropy	condition of turning toward	<i>neurotropy</i> [nū-RÖT-rō-pē], affinity of certain contrast mediums for nervous tissue
-uria	urine	<i>pyuria</i> [pī-YŪ-rē-ă], pus in the urine
-version	turning	<i>retroversion</i> [rĕ-trō-VĚR-zhŭn], a turning backward (said of the uterus)

# Putting It All Together

All medical terms have a word root, which is the element that gives the essential meaning to the word. For example, *card-* is a word root meaning heart. In the word *pericarditis*, the prefix *peri-* and the suffix *-itis* are added to the word root to form the whole word meaning an inflammation (*-itis*) of the area surrounding (*peri-*) the heart (*card-*). The word root can also appear in a combining form, which is the root plus a combining vowel or vowels. For example, *cardiology* is formed from *cardio-* (the word root *card-* plus the combining vowels *-i-* and *-o-*) plus the suffix *-logy* meaning the study of the heart.

## MORE ABOUT . . .

### Detecting Compound Words

An easy way to define compound words is to start at the end of the word, look at the suffix to determine its meaning, and then look at the word root. The word root will contain a combining vowel if the suffix begins with a consonant. If not, the combining vowel (usually "o") will be removed. An example is *neuritis*. The suffix *-itis* means "inflammation of." The word root *neur-*, nerve, does not need a combining vowel because *-itis* begins with a vowel. Therefore, *neuritis* is inflammation of a nerve. To repeat the basic rules: If a suffix begins with a vowel, do NOT use the "o." If the suffix begins with a consonant, retain the "o." Then figure out the meaning of any prefixes.

### Using Resources

Have each student or student group choose a healthrelated Web site on the Internet. Ask them to find at least five terms that are based on a prefix, suffix, or combining form found in Chapters 1 and 2.

### Using Medical Documents

Choose a medical document from the section starting at the end of this Instructor's Manual. Ask students to fill in terms that are made up of the word parts in Chapters 1 and 2. (Supply distance learners with a medical document and have them fill out as much as they can, using terms made up of the word parts in Chapters 1 and 2.)

## WORD PARTS EXERCISES

### Build Your Medical Vocabulary

Using the lists in this chapter and in Chapter 1, write the appropriate prefix, suffix, or combining form in the blank for each word part. The definition of each word part needed is given immediately under the blank. Item 1 is completed as an example.

1. oste myel itis  
(bone) (inflammation)
2. endo cardio graphy  
(within) (visual examining)
3. syn dactyly  
(together)
4. ultra violet  
(beyond)
5. hyper sensitive  
(overly)
6. entero patho genic  
(disease) (causing)
7. hypo dermic  
(beneath)
8. hypno therapy  
(sleep)
9. syn ost osis  
(together) (condition)
10. supra tonsillar  
(above)
11. hemi cranio tomy  
(half) (cutting)
12. geronto phobia  
(old people) (fear)
13. intra glandular  
(within)
14. leuko blast  
(white)

15. morph ology  
(structure) (study of)
16. arterio rhaphy  
(suture)
17. dermato rhagia  
(hemorrhage)
18. semi flexion  
(half)
19. therm algisia  
(heat)
20. fibr oid  
(resembling)
21. micro organism  
(tiny)

22. neo plasm  
(new)
23. subcost algia  
(pain)
24. blepharo plegia  
(paralysis)
25. fibro myx oma  
(fiber) (tumor)
26. sub lingual  
(under)
27. oligo meno rrhea  
(scanty, little) (a flowing)
28. poly dipsia  
(many, excessive)

## Find a Match

Each of the words in the left-hand column contains a word part that matches one of the definitions in the right-hand column. Write the letter of the answer that best fits into the left-hand column. Exercise 26 is completed as an example.

- |                              |                           |
|------------------------------|---------------------------|
| 29. <u>o</u> antipsychotic   | a. in the shape of        |
| 30. <u>n</u> polycystic      | b. without                |
| 31. <u>b</u> acephaly        | c. enlargement            |
| 32. <u>h</u> tenosynovitis   | d. abnormally low         |
| 33. <u>e</u> myotrophy       | e. nutrition              |
| 34. <u>i</u> laryngoscope    | f. self                   |
| 35. <u>j</u> dysgnosis       | g. outside of             |
| 36. <u>l</u> decontamination | h. inflammation           |
| 37. <u>a</u> chyliform       | i. instrument for viewing |
| 38. <u>f</u> autoinfection   | j. abnormal               |
| 39. <u>c</u> cardiomegaly    | k. between                |
| 40. <u>g</u> extrasensory    | l. away from              |
| 41. <u>k</u> intercerebral   | m. condition              |
| 42. <u>m</u> osteoporosis    | n. many                   |
| 43. <u>d</u> hyposthenia     | o. against                |

## Find the Word Part

Complete the word for which the definition is given. Add a word part(s) learned in this chapter.

44. Any disease of the hair: tricho pathy
45. Repair of a nose defect: rhino plasty
46. Removal of the appendix: append ectomy
47. Having a jaw that protrudes abnormally forward: pro gnathic

48. Disease of the heart: cardio pathy
49. Inflammation of the bronchi: bronch itis
50. Outer layer of a cell: ecto blast
51. Rib-shaped: costi form
52. Bone-forming cell: osteo blast
53. Above the nose: supra nasal
54. Study of the skin: dermat ology
55. Loss of the voice: a phonia
56. Study of tissue: hist ology
57. Inflammation of the ovary: ovar itis
58. Inflammation of the ear: ot itis
59. Specialist in the treatment of disorders of the nervous system: neuro logist
60. Incision into a vein: phlebo tomy
61. Study of the mind: psycho logy
62. Enlargement of the spleen: spleno megaly
63. Difficulty speaking: dys phasia
64. Cancer of the blood: leuk emia
65. Total or partial loss of sensation or awareness: an esthesia
66. A person with epilepsy: epi leptic
67. Study and treatment of the heart: cardio logy
68. Producing disease: patho genic
69. Moving a part away from the midline of the body: ab duction
70. Abnormally slow heartbeat: brady cardia
71. Not recommended: contra indicated
72. Low blood sugar: hypo glycemia
73. Between the layers of the skin: inter dermal
74. Abnormal enlargement of the head: mega cephal
75. Paralysis on one side of the body: hemi plegia
76. Below the sternum: infra sternal
77. Abnormally restless and inattentive: hyper active
78. Against an individual's own tissue: auto immune

## Separate the Word Parts

Break apart the following words and define each part in the space allowed. You will want to study the list in Chapter 1 before you do this exercise.

79. exocrine exo-, outside of; crin-, secreting
80. endocranium endo-, within; cranium
81. antidepressant anti-, against; depressant

82. somatotropic   somato-, body;   -tropic, turning toward
83. pseudesthesia   pseud-, false;   -esthesia, sensation
84. dextrotropic   dextro-, right;   -tropic, turning toward
85. algesic   alges-, pain;   -ic, pertaining to
86. xiphoid   xiph-, sword;   -oid, resembling
87. litholysis   litho, stone;   -lysis, destruction of
88. cryolysis   cryo-, cold;   -lysis, destruction of
89. pericardiorrhaphy   peri-, around, near;   cardio-, heart;   -rrhaphy, surgical suturing
90. multigravida   multi-, many;   -gravida, pregnancy
91. pancytopenia   pan-, all;   cyto- cell;   -penia, deficiency
92. salpingitis   salping-, fallopian tube;   -itis, inflammation
93. megalomania   megal-, abnormally large;   -mania, obsession
94. lithiasis   lith-, stone(s);   -iasis, pathological condition or state
95. chromatopsia   chromat-, color;   -opsia, vision
96. hemiparesis   hemi-, half;   -paresis, slight paralysis

## Find Where Word Parts Come From

Match the word part on the left with its etymology on the right. Remember, some of these word parts are from Chapter 1.

- |                           |                                       |
|---------------------------|---------------------------------------|
| 97. <u>  k</u> xipho-     | a. Greek <i>xanthos</i> , yellow      |
| 98. <u>  m</u> ambi-      | b. Greek <i>ichthys</i> , fish        |
| 99. <u>  e</u> -graph     | c. Latin <i>lac</i> , milk            |
| 100. <u>  n</u> -kinesia  | d. Greek <i>melas</i> , black         |
| 101. <u>  b</u> ichthyo-  | e. Greek <i>grapho</i> , to write     |
| 102. <u>  h</u> eosino-   | f. Greek <i>trophe</i> , nutrition    |
| 103. <u>  o</u> bio-      | g. Greek <i>klastos</i> , broken      |
| 104. <u>  a</u> xantho-   | h. Greek <i>eos</i> , dawn            |
| 105. <u>  l</u> -phylaxis | i. Greek <i>plasso</i> , to form      |
| 106. <u>  f</u> -trophy   | j. Greek <i>chronos</i> , time        |
| 107. <u>  j</u> chrono-   | k. Greek <i>xiphos</i> , sword        |
| 108. <u>  d</u> melano-   | l. Greek <i>phylaxis</i> , protection |
| 109. <u>  g</u> -clasis   | m. Latin <i>ambi-</i> , around; about |
| 110. <u>  i</u> -plasia   | n. Greek <i>kinesis</i> , movement    |
| 111. <u>  c</u> lacto-    | o. Greek <i>bios</i> , life           |

## USING THE INTERNET

Go to the Centers for Disease Control's site ([www.cdc.gov](http://www.cdc.gov)). Click on several of the topics on the site and find at least ten combining forms, suffixes, and prefixes that you learned about in this chapter and in Chapter 1.



# Answers to Chapter Exercises

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1. osteomyelitis
2. endocardiography
3. syndactyly
4. ultraviolet
5. hypersensitive
6. enteropathogenic
7. hypodermic
8. hypnotherapy
9. synostosis
10. supratonsillar
11. hemicraniotomy
12. gerontophobia
13. intraglandular
14. leukoblast
15. morphology
16. arteriorrhaphy
17. dermatorrhagia
18. semiflexion
19. thermalgesia
20. fibroid
21. microorganism
22. neoplasm
23. subcostalgia
24. blepharoplegia
25. fibromyxoma
26. sublingual
27. oligomenorrhea
28. polydipsia
29. o
30. n
31. b
32. h
33. e
34. i
35. j
36. l
37. a
38. f
39. c
40. g
41. k
42. m
43. d
44. trichopathy
45. rhinoplasty
46. appendectomy
47. prognathic
48. cardiopathy
49. bronchitis
50. ectoblast
51. costiform
52. osteoblast
53. supranasal
54. dermatology
55. aphonia
56. histology
57. ovaritis
58. otitis
59. neurologist
60. phlebotomy
61. psychology
62. splenomegaly
63. dysphasia
64. leukemia
65. anesthesia
66. epileptic
67. cardiology
68. pathogenic
69. abduction
70. bradycardia
71. contraindicated
72. hypoglycemic
73. interdermal
74. megacephaly
75. hemiplegia
76. infrasternal
77. hyperactive
78. autoimmune
79. exo-, outside of; crin-, secreting
80. endo-, within; cranium
81. anti-, against; depressant
82. somato-, body; -tropic, turning toward
83. pseud-, false; -esthesia, sensation
84. dextro-, right; -tropic, turning toward
85. alges-, pain; -ic, pertaining to
86. xiph-, sword; -oid, resembling
87. litho, stone; -lysis, destruction of
88. cryo-, cold; -lysis, destruction of
89. peri-, around, near; cardio-, heart; -rrhaphy, surgical suturing
90. multi-, many; -gravida, pregnancy
91. pan-, all; cyto- cell; -penia, deficiency
92. salping-, fallopian tube; -itis, inflammation
93. megalo-, abnormally large; -mania, obsession
94. lith-, stone(s); -iasis, pathological condition or state
95. chromat-, color; -opsia, vision
96. hemi-, half; -paresis, slight paralysis
97. k
98. m
99. e
100. n
101. b
102. h
103. o
104. a
105. l
106. f
107. j
108. d
109. g
110. i
111. c

Name \_\_\_\_\_ Date \_\_\_\_\_

## Chapter 2: Word-Building (20 questions—5 pts. each)

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Using the following word parts, complete the word that best fits each definition given below. Word parts may be used more than once.

ambi-	bacteri(o)	lith(o)	-pathy
anti-	chrom(o)	-lytic	phot(o)
-algia	cyt(o)	mega	-plasty
-asthenia	-cyte	-megaly	-rrhea
aut(o)-	gyn(o)	path(o)	therm(o)

1. Nerve pain: neur \_\_\_\_\_
2. Bone repair: osteo \_\_\_\_\_
3. Study of disease: \_\_\_\_\_ logy
4. Nerve weakness: neur \_\_\_\_\_
5. Abnormally enlarged head: \_\_\_\_\_ cephaly
6. Enlarged heart: cardio \_\_\_\_\_
7. Dissolving of stones: \_\_\_\_\_ lytic
8. Caused by bacteria: \_\_\_\_\_ genic
9. Of both sides: \_\_\_\_\_ lateral
10. Cell formed in lymph: lympho \_\_\_\_\_
11. Agent that kills cells: \_\_\_\_\_ cide
12. Repair of the nose: rhino \_\_\_\_\_
13. Self-love: \_\_\_\_\_ philia
14. Production of heat: \_\_\_\_\_ genesis
15. Pigmented cell: \_\_\_\_\_ cyte
16. Foot pain: pod \_\_\_\_\_
17. Female disease: \_\_\_\_\_ pathy
18. Drug that reduces bleeding: \_\_\_\_\_ hemorrhagic
19. Sensitivity to light: \_\_\_\_\_ phobia
20. Nasal discharge: rhino \_\_\_\_\_

## Chapter 2: Word-Building Answer Key

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1. neuralgia
2. osteoplasty
3. pathology
4. neurasthenia
5. megacephaly
6. cardiomegaly
7. litholytic
8. bacteriogenic
9. ambilateral
10. lymphocyte
11. cytocide
12. rhinoplasty
13. autophilia
14. thermogenesis
15. chromocyte
16. podalgia
17. gynopathy
18. antihemorrhagic
19. photophobia
20. rhinorrhea