

Eight Keys to Building Medical Terms

BLOCK	DATA AND ANSWERS	DESCRIPTIONS AND QUESTIONS
2-1	words	Words in the English language, including medical terms, are made up of component parts. By systematically combining these component parts, we can construct _____ in any scientific discipline, especially the medical field. Refer to Table 2.1 (which contains the word roots, combining forms, prefixes, and suffixes relevant to the medical field).
2-2	word root, root word	Every word has a root, sometimes also known as a base or a stem. We also can call it a word root, word base, or word stem. Some textbooks use the term “word root,” some use “root word,” and some use these terms interchangeably—which is what this book does. Thus, the fundamental component of a word is known as the _____ or _____.
2-3	terms eight keys	This book provides eight keys to building medical terms from word roots. Note that, although this book uses eight keys, you may see other books that give eight, nine, or ten keys. Ask your instructor for guidance when comparing different systems. You will be learning how to build medical _____ by using _____.

TABLE 2.1 Word Components in this Chapter

WORD ROOTS	COMBINING FORMS	PREFIXES
ache	angi/o	a-
bile	bil/i	an-
cholecyst	cardi/o	anti-
cusis	cerebr/o	brady-
cyan	cor/e	de-
derma	enter/o	dis-
dermat	erythr/o	dys-
endometr	gastr/o	eu-
erythr	hem/o	ex-
feca	lapar/o	hemi-
fore	laryng/o	hemo-
gall	lymph/o	hyper-
gastr	melan/o	mal-
genesis	myc/o	pan-
head	nat/a	quadri-
infect	nephro	
lapar	neur/o	-al
muc	oncy/o	-algia
neur	oste/o	-cytes
nutrition	ot/o	-ectasis
ophthalm	pelv/i	-emia
pareun	psych/o	-gram
phobia	rachi/o	-ia
presby	rhin/o	-itis
skin	stomat/o	-logist
spinal	trache/o	-logy
stenosis		-lysis
stomat		-metry
stone		-osis
tension		-ous
therapy		-pathy
toxin		-phoria
zoo		-plegia
		-pnea
		-porosis
		-scopy
		-tion
		-tocia
		-us

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2-4		<p>Medical terms derive from English, French, German, Spanish, Greek, Italian, Latin, and many other languages. The eight keys described here are applicable to the majority of the medical terms used in this country by a variety of health professionals. Of course, there are exceptions to every key. Consider the following. First, different medical dictionaries may provide different definitions, pronunciations, and/or word parts for the same medical term. Second, one instructor's interpretation of a medical term (meaning, pronunciation, and/or word parts) may differ from that of another instructor. Consult your instructor if you come across such variations.</p>

BOX 2.1**Allied Health Professions**

Medicine: cardiovascular technologists and technicians, nuclear medicine technologists, surgical technologists, medical assistants

Dentistry: dental hygienists, dental assistants

Nursing: registered nurses, licensed practical nurses, licensed vocational nurses

Pharmacy: pharmacy technicians, pharmacy aides

Dietetics: dietitians, dietetic technicians, dietetic assistants

Optometry: dispensing opticians

Emergency Medical Services: emergency medical technicians and paramedics

Imaging Modalities: radiologic technologists and technicians, radiation therapists

Respiratory Care: respiratory therapists

Physical Therapy: physical therapists, physical therapists assistants and aides

Veterinary Medicine: veterinary technologists and technicians, animal care and service workers

Miscellaneous: clinical laboratory (medical) technologists and technicians; medical, dental, and ophthalmic laboratory technicians; nursing, psychiatric, and home health aides; medical assistants

Source: P. S. Stanfield, N. Cross, Y. H. Hui, eds. *Introduction to the Health Professions*, 5th ed. (Sudbury, MA: Jones & Bartlett, 2009).

BLOCK	DATA AND ANSWERS	DESCRIPTIONS AND QUESTIONS
2-5	<p>term prefix, root</p>	<p>A word root has many characteristics including but not limited to the following:</p> <ol style="list-style-type: none"> 1. It is usually derived from Greek or Latin. 2. It is the foundation upon which other components of a word are attached. 3. It can be a noun, an adjective, and so on. 4. It can occur as a simple group of letters derived from the first part of a complete word, such as a noun or an adjective. This is more common than other forms. 5. Although a word root in a medical term usually refers to a part of the body, it is not always so. <p>All forms of word roots will be represented throughout this book.</p> <p>Another word component is a prefix. <i>pre-</i> means before; prefixes go before the word root.</p> <p>Thus, one way to build a medical _____ is by combining a _____ with a word _____.</p>

BOX 2.2

Abbreviations

<p>q qd qod Q ____ h bid tid qid hs ac pc prn ad lib stat</p>	<p>every once a day every other day every ____ other hour twice a day three times a day four times a day at bedtime (hour of sleep) before meals after meals when needed as desired immediately</p>
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BLOCK	DATA AND ANSWERS	DESCRIPTIONS AND QUESTIONS
2-6	prefix, root 1, term	Key 1: A prefix and a word root can be combined to form a medical term. When a _____ joins a word _____, it complies with Key __ to form a medical _____.
2-7	hypertension (hahy'-per-ten-shun')	There are many prefixes. For example, hypertension means high blood pressure. <i>hyper-</i> is a prefix meaning above or more than normal. "tension" is a word root meaning force. In medicine, tension refers to blood pressure.
2-8	prefix, higher, above, more than normal word root blood pressure high blood pressure	<i>hyper-</i> is a _____ meaning _____, _____, or _____. "tension" is a _____ and refers to _____. Hypertension is _____.
2-9	malnutrition (mal-nu'-tri-shun)	Malnutrition means bad nutrition. <i>mal-</i> is a prefix meaning bad. "nutrition" is a word root meaning nourishing, nourishment, food, etc.
2-10	bad malnutrition	The prefix <i>mal-</i> means _____. The medical term for bad nutrition is _____.
2-11	agenesis (ey-jen-uh-sis)	Agenesis means without development. <i>a-</i> is a prefix meaning without. "genesis" is a word root meaning generation (development).

BLOCK	DATA AND ANSWERS	DESCRIPTIONS AND QUESTIONS
2-12	prefix, without root generation, development	<i>a-</i> is a _____ meaning _____. “genesis” is a word _____ meaning _____ or _____.
2-13	antitoxin (an’-ti- <u>tok</u> -sin’)	Antitoxin means against a toxic substance. <i>anti-</i> is a prefix meaning against. “toxin” is a word root meaning a toxic substance.
2-14	disinfect (dis’-in- <u>fekt</u>)	Disinfect means to free of infection. <i>dis-</i> is a prefix meaning to free of, separate from, or undo. “infect” is a word root meaning to contaminate with a harmful agent.
2-15	prefix, against root, a toxic substance	<i>anti-</i> is a _____ meaning _____. “toxin” is a word _____ meaning _____. _____.
2-16	prefix, to free of separate from, undo root, to contaminate with a harmful agent	<i>dis-</i> is a _____ meaning _____, _____, _____, or _____. “infect” is a word _____ meaning _____. _____. _____.
2-17	against a toxic substance to free of infection	Antitoxin means _____ . _____ . Disinfect means _____ .
2-18		Another type of word component is a suffix. A suffix is placed at the end of a word root. We can combine a word root with a suffix to form a medical term.

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BLOCK	DATA AND ANSWERS	DESCRIPTIONS AND QUESTIONS
2-19	root, suffix 2, term	<p>Key 2: A word root and a suffix can be combined to form a medical term.</p> <p>When a word _____ joins a _____, it complies with Key __ to form a medical _____.</p>
2-20	dermatitis (derm'-ah-ti-tis) suffix, inflammation root, the skin	<p>Dermatitis means inflammation of the skin.</p> <p>"dermat" is a word root meaning the skin.</p> <p>-itis is a suffix meaning inflammation.</p> <p>-itis is a _____ meaning _____.</p> <p>"dermat" is a word _____ meaning _____.</p>
2-21	terms root, part, organ, -itis	<p>In medicine, when -itis is added to a medical word component describing a body part or organ, it means the latter is inflamed.</p> <p>Many medical _____ can be built by combining a word _____ referring to a body _____ or _____ with the suffix _____.</p>
2-22	gastritis (ga'-stahy-tis) endometritis (en-doh'-mi-trahy-tis) cholecystitis (koh'-luh-si'-stahy-tis)	<p>Gastritis is inflammation of the stomach.</p> <p>Endometritis is inflammation of the lining of the uterus.</p> <p>Cholecystitis is inflammation of the gallbladder.</p>
2-23		<p>"gastr" is a word root meaning the stomach.</p> <p>"endometr" is a word root meaning the lining of the uterus.</p> <p>"cholecyst" is a word root meaning the gallbladder.</p> <p>-itis is a suffix meaning inflammation.</p>

BLOCK	DATA AND ANSWERS	DESCRIPTIONS AND QUESTIONS
2-24	inflammation of the stomach, “gastr” Endometritis “endometr” Cholecystitis “cholecyst” gallbladder -itis, inflammation	Gastritis is _____, _____, _____, _____, and its word root is _____. _____ is inflammation of the lining of the uterus, and its word root is _____. _____ is inflammation of the gallbladder. The word root is _____, meaning _____. The suffix is _____, meaning _____.
2-25	cyanosis (sahy’-uh- <u>noh</u> -sis)	Cyanosis is the condition of being blue or a disease of blueness. Thus, it also means blueness of the skin. “cyan” is a word root meaning blue. -osis is a suffix meaning the condition of.
2-26	word root, blue -osis the condition of blueness, blueness of the skin	“cyan” is a _____ meaning _____. _____ is a suffix meaning the condition of. Cyanosis is _____ or _____.
2-27	mucus (myoo- <u>kuhs</u>)	Mucus is a thick, slippery fluid produced by the membranes lining certain organs, such as the nose, mouth, throat, and vagina. Mucus is the Latin word for a semi-fluid, slimy discharge. It is a singular noun with the following word components: “muc” is a word root referring to slippery fluid. -us is a suffix indicating a singular noun.
2-28	mucous (myoo- <u>kuhs</u>)	Mucous means pertaining to mucus or is an adjective for mucus. -ous is a suffix meaning pertaining to.

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BLOCK	DATA AND ANSWERS	DESCRIPTIONS AND QUESTIONS
2-29	a thick, slippery fluid produced by the membranes lining certain organs, such as the nose, mouth, throat, and vagina, Mucus is the Latin word for a semi-fluid slimy discharge	Mucus is _____, _____ _____ _____ _____, _____, _____ _____, _____, _____ _____. _____ _____ _____.
2-30	suffix, a singular noun suffix, pertaining to	-us is a _____ indicating _____ _____. -ous is a _____ meaning _____ _____.
2-31	pertaining to mucus adjective	Mucous means _____ and is an _____ for mucus.
2-32	prefix, suffix 3, term	Key 3: A prefix and a suffix can be combined to form a medical term. When a _____ joins a _____, it complies with Key ____ to form a medical _____.
2-33	dystocia (dis'- <u>to</u> -zee-ah)	Dystocia means difficult labor. <i>dys-</i> is a prefix meaning difficult. <i>-tocia</i> is a suffix meaning labor (childbirth).
2-34	euphoria (u'- <u>for</u> -e-ah)	Euphoria is the state of well-being. <i>eu-</i> is a prefix meaning good or well-being. <i>-phoria</i> is a suffix meaning bearing, the state of.

BLOCK	DATA AND ANSWERS	DESCRIPTIONS AND QUESTIONS
2-35	prefix, difficult <i>-tokia</i> <i>eu-</i> suffix, state of	<i>dys-</i> is a _____ meaning _____. _____ is a suffix meaning labor. _____ is a prefix meaning well-being. <i>-phoria</i> is a _____ meaning _____.
2-36	difficult labor the state of well-being	Dystocia is _____. Euphoria is _____.
2-37	anemia (ah'- <u>ne</u> -me-ah)	Anemia means no, not, or without blood. In medicine, it refers to reduced red blood cells. <i>An-</i> is a prefix meaning no, not, or without. <i>-emia</i> is a suffix meaning condition of blood.
2-38	quadriplegia (quad'-ri- <u>ple</u> -jah)	Quadriplegia is paralysis of all four extremities. <i>quadri-</i> is a prefix meaning four. <i>-plegia</i> is a suffix meaning paralysis.
2-39	Anemia <i>an-</i> , <i>-emia</i> Quadriplegia <i>quadri-</i> , <i>-plegia</i>	_____ means no, not, or without blood. The prefix is _____, and the suffix is _____. _____ is paralysis of all four extremities. The prefix is _____ and the suffix is _____.
2-40	no, not, without blood reduced red blood cells paralysis of all four extremities	Anemia means _____, _____, or _____. _____. In medicine, anemia means _____. _____. Quadriplegia is _____. _____.

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BLOCK	DATA AND ANSWERS	DESCRIPTIONS AND QUESTIONS
2-41	bradypnea (brad'-ip- <u>ne</u> -ah)	Bradypnea is slow breathing. <i>brady-</i> is a prefix meaning slow. <i>-pnea</i> is a suffix meaning breathing.
2-42	polyphagia (pau'-li-fa-je'-ah)	Polyphagia is excessive eating. <i>poly-</i> is a prefix meaning many or excessive. <i>-phagia</i> is a suffix meaning eating.
2-43	Bradypnea <i>brady-</i> <i>-pnea</i>	_____ is slow breathing. _____ is a prefix meaning slow. _____ is a suffix meaning breathing.
2-44	Polyphagia <i>poly-</i> , prefix suffix, eating	_____ is excessive eating. _____ is a _____ meaning many or excessive. <i>-phagia</i> is a _____ meaning _____.
2-45	term root, root	We can combine a word root with another word root to form a medical term. One way to build a medical _____ is by combining one word _____ with another word _____.
2-46	root root, 4 term	Key 4: One word root can be combined with another word root to form a medical term. When one word _____ joins with another word _____, it complies with Key ___ to form a medical _____.
2-47		A compound word is formed when we join one word with another word. When we join two word roots, we may be joining two words, thus forming a compound word.

BLOCK	DATA AND ANSWERS	DESCRIPTIONS AND QUESTIONS
2-48	root root, compound	When one word _____ is combined with another word _____, a _____ word may be formed. Three examples are headache, gallstone, and foreskin, all common medical terms familiar to most of us.
2-49	headache (<u>hed</u> -ache)	A headache refers to pain in the head. "head" is a word root. "ache" is a word root. In this case, the combination can be considered a simple word or a compound word.
2-50	gallstone (gall-s- <u>tone</u>)	Gallstone is a stone in the gallbladder. "gall" is a word root meaning gallbladder. "stone" is a word root meaning stone.
2-51	foreskin (for-s- <u>kin</u>)	Foreskin is the retractable fold of skin in the front part of the penis. "fore" is a word root meaning front. "skin" is a word root meaning skin.
2-52	zoophobia (zoh'-uh- <u>foh</u> -bee-uh)	Zoophobia is fear of animals. "zoo" is a word root meaning zoo. "phobia" is a word root meaning fear or afraid of. (Note that "phobia" can be a word root or a suffix.)
2-53	the fear of or the condition of being afraid of animals	Zoophobia is _____ _____ _____.
2-54	presbycusis (prez'-bi- <u>kyu</u> -sas)	Presbycusis is a hearing problem due to old age. "presby" is a word root meaning old age. "cusis" is a word root meaning hearing problem.

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BLOCK	DATA AND ANSWERS	DESCRIPTIONS AND QUESTIONS
2-55	Presbycusis “presby” “cusis”	_____ is a hearing problem due to old age. The first word root is _____, meaning old age. The second word root is _____, meaning hearing problem.
2-56	prefix, root suffix, term	Some medical terms are built by combining three components: a prefix, a word root, and a suffix, in that order. That is, if you combine a _____, a word _____, and a _____, a medical _____ is formed.
2-57	prefix, root, suffix 5 term	Key 5: One prefix and one word root can be combined with a suffix to form a medical term. When a _____, a word _____, and a _____ are combined in that order, it complies with Key ___ to form a medical _____.
2-58	hemigastrectomy (hem’-i-ga-strek-to-me)	Hemigastrectomy is removal of half of the stomach.
2-59	5	<i>hemi-</i> is a prefix meaning half. “gastr” is a word root meaning stomach. <i>-ectomy</i> is a suffix meaning removal. This method of building the medical term for hemigastrectomy complies with Key _____.
2-60	panencephalitis (pan’-en-sefa’-li- tis)	Panencephalitis is inflammation of the entire brain. <i>pan-</i> is a prefix meaning entire. “encephal” is a word root meaning the brain. <i>-itis</i> is a suffix meaning inflammation.

BLOCK	DATA AND ANSWERS	DESCRIPTIONS AND QUESTIONS
2-61	prefix, entire “encephal,” word root suffix, inflammation	<p><i>pan-</i> is a _____ meaning _____.</p> <p>_____ is a _____ meaning brain.</p> <p><i>-itis</i> is a _____ meaning _____.</p>
2-62	prefix, half word root stomach suffix, removal	<p><i>hemi-</i> is a _____ meaning _____.</p> <p><i>gastr-</i> is a _____ meaning _____.</p> <p><i>-ectomy</i> is a _____ meaning _____.</p>
2-63	Panencephalitis Hemigastrectomy 5	<p>_____ is inflammation of the entire brain.</p> <p>_____ is removal of half of the stomach.</p> <p>Both medical terms are built by combining a prefix, a word root, and a suffix. This method of building a medical term complies with Key ____.</p>
2-64	defecation (de'-fi-ka-shun)	<p>Defecation is the process of excreting human feces.</p> <p><i>de-</i> is a prefix meaning to come down.</p> <p>“feca” is a word root meaning feces.</p> <p><i>-tion</i> is a suffix meaning process.</p>
2-65	hyperalbuminemia (hi'-per-al-byoo'-mih-nee-mee-ah)	<p>Hyperalbuminemia is an excess of specific protein substances in the blood.</p> <p><i>hyper-</i> is a prefix meaning over, excessive.</p> <p>“albumin” is a word root referring to specific protein substances in the blood.</p> <p><i>-emia</i> is a suffix meaning blood.</p>

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BLOCK	DATA AND ANSWERS	DESCRIPTIONS AND QUESTIONS
2-66	<i>de-</i> word root, feces <i>-tion</i> the process of excreting human feces	_____ is a prefix meaning to come down. "feca" is a _____ meaning _____. _____ is a suffix meaning process. Defecation is _____ _____.
2-67	<i>hyper-</i> , prefix word root specific protein substances in blood <i>-emia</i> Hyperalbuminemia	_____ is a _____ meaning over, excessive. "albumin" is a _____ meaning _____ _____. _____ is a suffix meaning blood. _____ is an excess of specific protein substances in the blood.
2-68	exophthalmia (ek'-sof- thal-me-ah)	Exophthalmia is protrusion of the eyeballs due to a hormonal disorder. ex- is a prefix meaning outward, away from (e.g., away from the face or protrusion). "ophthalm" is a word root referring to the eyes or eyeballs. -ia is a suffix meaning condition.
2-69	dyspareunia (dis'-puh- roo-nee-uh)	Dyspareunia is difficult, painful mating or sexual intercourse. dys- is a prefix meaning difficult or painful. "pareun" is a word root meaning mating or intercourse. -ia is a suffix meaning condition.

BLOCK	DATA AND ANSWERS	DESCRIPTIONS AND QUESTIONS
2-70	<p><i>ex-</i></p> <p>“ophthalm”</p> <p><i>-ia</i></p> <p>Exophthalmia</p>	<p>_____ is a prefix meaning outward, away from (e.g., away from the face or protrusion).</p> <p>_____ is a word root referring to the eyes or eyeballs.</p> <p>_____ is a suffix meaning condition.</p> <p>_____ is protrusion of the eyeballs due to a hormonal disorder.</p>
2-71	<p>difficult, painful mating or sexual intercourse</p> <p>prefix, difficult painful</p> <p>word root mating, intercourse</p> <p>suffix, condition</p>	<p>Dyspareunia is _____, _____.</p> <p><i>dys-</i> is a _____ meaning _____ or _____.</p> <p><i>pareun-</i> is a _____ meaning _____ or _____.</p> <p><i>-ia</i> is a _____ meaning _____.</p>
2-72	<p>combining form</p> <p>word root, slash</p> <p>vowel</p> <p>word root/vowel</p>	<p>There is another word component that we have not yet discussed: the combining form. A combining form is a word root to which a final vowel (usually the letter “o”) is added.</p> <p>In this book, we represent the combining form by a word root, a slash (/), and a vowel, e.g., word root/vowel.</p> <p>Thus, a _____ is a combination of a _____, a _____, and a _____.</p> <p>The connection between the two components is represented as _____ throughout this book.</p>

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BLOCK	DATA AND ANSWERS	DESCRIPTIONS AND QUESTIONS
2-73	term combining form suffix, 6	<p>Key 6: A suffix can be joined to a combining form to create a medical term.</p> <p>Thus, one way to build a medical _____ is by combining one _____ with a _____. This is Key ___.</p>
2-74	neurologist (nyoo'-rol-uh-jist)	<p>A neurologist is a physician who specializes in the nervous system.</p> <p>"neur" is a word root meaning nerve.</p> <p>"neur/o" is the combining form.</p> <p>-logist is a suffix meaning one who specializes.</p> <p>Thus, this medical term has two components: a combining form ("neur/o") and a suffix (-logist).</p>
2-75	word root, nerve combining form suffix, one who specializes a physician specializing in the nervous system combining form suffix, 6 term	<p>"neur" is a _____ meaning _____.</p> <p>"neur/o" is the _____ of "neur."</p> <p>-logist is a _____ meaning _____.</p> <p>A neurologist is _____.</p> <p>When a _____ is added to a _____, it complies with Key ___ to form a medical _____.</p>
2-76	erythrocytes (i-rith-ruh-sahyt')	<p>Erythrocytes means red cells. In medicine and biology these are the red blood cells.</p> <p>"erythr" is a word root meaning red.</p> <p>"erythr/o" is the combining form.</p> <p>-cytes is a suffix meaning cell.</p>

BLOCK	DATA AND ANSWERS	DESCRIPTIONS AND QUESTIONS
2-77	combining form red suffix, cells red cells the red blood cells	"erythro/o" is a _____ meaning _____. -cytes is a _____ meaning _____. Erythrocytes means _____. In medicine and biology it refers to _____.
2-78	laparoscopy (<u>lap</u> -er-uh-skoh'-pee)	Laparoscopy is use of a scope to penetrate the abdomen wall to study the abdominal cavity. "lapar" is a word root meaning abdominal wall. "lapar/o" is the combining form. -scopy is a suffix referring to testing or examining with a scope.
2-79	nephropathy (nuh'-fro-puh-thee)	Nephropathy is disease of the kidney. "nephr/o" is the combining form. -pathy is a suffix meaning disease, disorder, or pathological condition.
2-80	"lapar/o" suffix, testing examining with a scope	_____ is a combining form meaning abdominal wall. -scopy is a _____ meaning _____ or _____.
2-81	combining form kidney -pathy	"nephr/o" is a _____ meaning _____. _____ is a suffix meaning disease, disorder, or pathological condition.
2-82	Laparoscopy disease of the kidney	_____ is using a scope to penetrate the abdomen wall to study the abdominal cavity. Nephropathy is _____.

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BLOCK	DATA AND ANSWERS	DESCRIPTIONS AND QUESTIONS
2-83	cardiology (<u>ka</u> hr-dee-ol'-uh-jee)	Cardiology is the study of the heart. "cardi/o" is a combining form meaning the heart. -logy is a suffix meaning the study of.
2-84	osteoporosis (os'-tee-oh-puh- <u>roh</u> -sis)	Osteoporosis is the condition of pores or holes in the bone. "oste/o" is a combining form meaning bones. -porosis is a suffix meaning holes or pores.
2-85	"cardi/o" suffix, the study of	_____ is a combining form meaning the heart. -logy is a _____ meaning _____.
2-86	combining form bones -porosis	"oste/o" is a _____ meaning _____. _____ is a suffix meaning holes or pores.
2-87	the study of the heart Osteoporosis	Cardiology is _____. _____ is the condition of pores or holes in the bone.
2-88	combining form word root, term 7	Key 7: A combining form can be joined to a word root to create a medical term. That is, if you join a _____ with a _____, a medical _____ is formed. This complies with Key ____.
2-89	melanoderma (mel'-lan-uh- <u>dur</u> -ma)	Melanoderma is discoloration of the skin. "melan/o" is a combining form meaning black. "derma" is the word root for skin. Thus, this medical term has two components: a combining form ("melan/o") and a word root ("derma").

BLOCK	DATA AND ANSWERS	DESCRIPTIONS AND QUESTIONS
2-90	hemophobia (he'-mo-foh-bee-uh)	Hemophobia is fear of blood. "hem/o" is a combining form meaning blood. "phobia" is a root word meaning fear or condition of being afraid of.
2-91	combining form black "derma"	"melan/o" is a _____ meaning _____. _____ is a word root meaning skin.
2-92	"hem/o" root word, fear being afraid of	_____ is a combining form meaning blood. "phobia" is a _____ meaning _____ or _____.
2-93	discoloration of the skin Hemophobia	Melanoderma is _____. _____ is fear of blood.
2-94	psychotherapy (sahy'-koh-ther-uh-pee)	Psychotherapy means treatment of the mind or soul. "psych/o" is a combining form meaning mind or soul. "therapy" is a root word meaning treatment.
2-95	tracheostenosis (trey'-kee-oh-ste-no-sis)	Tracheostenosis is narrowing or constriction of the windpipe. "trache/o" is a combining form meaning windpipe. "stenosis" is a root word meaning narrowing or constriction.
2-96	cerebrospinal (ser'-eh-broh-spy-nal)	Cerebrospinal means (space flowing) through the brain and spinal cord. "cerebr/o" is a combining form meaning brain. "spinal" is a root word meaning spine.
2-97	"psych/o" root word treatment	_____ is a combining form meaning mind or soul. "therapy" is a _____ meaning _____.

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BLOCK	DATA AND ANSWERS	DESCRIPTIONS AND QUESTIONS
2-98	combining form windpipe “stenosis”	“trache/o” is a _____ meaning _____. _____ is a root word meaning narrowing or constriction.
2-99	“cerebr/o” root word spine	_____ is a combining form meaning brain. “spinal” is a _____ referring to the _____.
2-100	(space flowing) through the brain and spinal cord treatment of the mind or soul narrowing or constriction of the windpipe	Cerebrospinal means _____ _____ _____. Psychotherapy means _____ _____. Tracheostenosis is _____ _____ _____.
2-101		Keys 6 and 7 have not explored the complexity of the combining form. Key 8 addresses the many variations of the definitions used in these two keys. Key 8: There are variations of the basic combining forms in building medical terms. Variation 1: Applications and functions of the vowels. Variation 2: Keeping or deleting a vowel when two vowels would be adjacent in a medical term. Variation 3: Keeping or deleting a vowel when more than one combining form is present.
2-102		Variation 1: Applications and functions of the vowels. The vowel in a combining form can be any of the following: a, e, i, o, and u.

BLOCK	DATA AND ANSWERS	DESCRIPTIONS AND QUESTIONS
2-103	word root, vowel, a, e i, o, u	Thus, a combining form is made up of a _____ _____, slash, and a _____, which can be __, __, _, __, or __.
2-104		The vowel in a combining form serves two important purposes: 1. To link two components of a medical term 2. To facilitate pronunciation
2-105	To link two components of a medical term To facilitate pronunciation	The vowel in a combining form has two uses: 1. _____ _____ 2. _____ _____
2-106		Of the five vowels: "o" is most common. "i" is found in some combining forms. "e" is found in several combining forms. "a" is rare but appears in a limited number of combining forms. "u" is seldom found in combining forms.
2-107	"o", "u"	You have seen several combination forms with the vowel "o" under Keys 6 and 7. The most common vowel used to create a combining form is ____. The most uncommon vowel used is ____. The following gives one more example of a medical term with the vowel "o."

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BLOCK	DATA AND ANSWERS	DESCRIPTIONS AND QUESTIONS
2-108	gynecology (gigh'-neh-kol-oh-jee)	<p>Gynecology means study of women. In medicine and biology, it means the branch of medicine that studies diseases and disorders of the female reproductive system.</p> <p>"gynec/o" is a combining form meaning women.</p> <p>-logy is a suffix meaning the study of.</p>
2-109	biliary (bil-ee-er'-ee)	<p>The vowel "i" is used in some combining forms.</p> <p>"biliary" means pertaining to the bile. Bile is a bitter, alkaline, brownish-yellow or greenish-yellow fluid that is secreted by the liver and stored in the gallbladder. Bile also is called gall.</p> <p>"bil/i" is a combining form meaning bile.</p> <p>-ary is a suffix meaning pertaining to.</p>
2-110	pelvimetry (pel'-vim-i-tree)	<p>Pelvimetry is the process of measuring the pelvis.</p> <p>"pelv/i" is a combining form meaning pelvis.</p> <p>-metry is a suffix meaning the process of measuring.</p>
2-111	<p>"bil/i"</p> <p>suffix, pertaining to</p>	<p>_____ is a combining form meaning bile.</p> <p>-ary is a _____ meaning _____.</p>
2-112	<p>"pelv/i"</p> <p>-metry</p>	<p>_____ is a combining form meaning pelvis.</p> <p>_____ is a suffix meaning the process of measuring.</p>

BLOCK	DATA AND ANSWERS	DESCRIPTIONS AND QUESTIONS
2-113	<p>the process of measuring the pelvis</p> <p>a bitter, alkaline brownish-yellow or greenish-yellow fluid that is secreted by the liver and stored in the gallbladder</p> <p>gall</p> <p>pertaining to the bile</p>	<p>Pelvimetry is _____ .</p> <p>_____ .</p> <p>Bile is _____ .</p> <p>_____ .</p> <p>_____ .</p> <p>_____ .</p> <p>Bile also is called _____ .</p> <p>Biliary means _____ .</p> <p>_____ .</p>
2-114	<p>corectasis (kor'-<u>ek</u>-ta-sis)</p>	<p>The vowel "e" is found in some combination forms.</p> <p>Corectasis is dilation of the pupil.</p> <p>"cor/e" is a combining form meaning pupil.</p> <p>-ectasis is a suffix meaning dilation.</p> <p>Note that one "e" is deleted when the two word parts are combined. This facilitates pronunciation. See later blocks for more details.</p>
2-115	<p>natal (na-<u>tal</u>)</p>	<p>Although uncommon, the vowel "a" is occasionally used in combination forms.</p> <p>Natal means pertaining to birth.</p> <p>"nat/a" is the combining form.</p> <p>-al is a suffix meaning pertaining to.</p> <p>Note that one "a" is deleted when the two word parts are combined. This facilitates pronunciation. See later blocks in this chapter for more details.</p>

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BLOCK	DATA AND ANSWERS	DESCRIPTIONS AND QUESTIONS
2-116	“cor/e” -ectasis	_____ is a combining form meaning pupil. _____ is a suffix meaning dilation.
2-117	combining form birth -al	“nat/a” is a _____ meaning _____. _____ is a suffix meaning pertaining to.
2-118	“natal” corectasis	_____ means pertaining to birth. _____ is dilation of the pupil.
2-119		Variation 2: Keeping or deleting a vowel when two vowels would be adjacent in a medical term. Sometimes the vowel “o” is not included in the medical term itself after the combining form is joined to a suffix (Key 6). The next few blocks give examples.
2-120	stomatitis (<u>sto</u> -mah-ti’-tis)	Stomatitis is inflammation of the mouth. “stomat/o” is a combining form meaning the mouth. -itis is a suffix meaning inflammation. When two vowels would be adjacent in a medical term, the one belonging to the combining form is usually deleted. This facilitates pronunciation of the medical term.
2-121	rachialgia (ray’-kee- <u>al</u> -jia)	Rachialgia is pain in the spine. “rachi/o” is a combining form meaning spine. -algia is a suffix meaning pain. When two vowels would be adjacent in a medical term, the one belonging to the combining form is usually deleted. The one not deleted is usually attached to a word part with a consonant. This facilitates pronunciation of the medical term.

BLOCK	DATA AND ANSWERS	DESCRIPTIONS AND QUESTIONS
2-122	“stomat/o” suffix, inflammation	_____ is a combining form meaning the mouth. -itis is a _____ meaning _____.
2-123	combining form spine suffix, pain	“rachi/o” is a _____ meaning _____. -algia is a _____ meaning _____.
2-124	inflammation of the mouth Rachialgia	Stomatitis is _____ _____ is pain in the spine.
2-125	gastroenterologist (gas- troh-en-tuh-rol’-uh-jist)	Variation 3: Keeping or deleting a vowel when more than one combining form is present. Some medical terms contain two or more combining forms. A gastroenterologist is a physician who specializes in the study of the stomach and intestine. “gastr/o” is a combining form meaning stomach. “enter/o” is a combining form meaning intestine. -logist is a suffix meaning one specializing in. Note that both vowels are kept. This facilitates pronunciation. Also, no two vowels are adjacent.
2-126	otorhinolaryngology (oh’- toh-rah-y-noh’-lar-ing- gol-uh-jee)	Otorhinolaryngology is the study of the ear, nose, and throat. “ot/o” is a combining form meaning ear. “rhin/o” is a combining form meaning nose. “laryng/o” is a combining form meaning throat or larynx. -logy is a suffix meaning study of. Note that all three vowels are kept. This facilitates pronunciation. Also, no two vowels are adjacent.

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BLOCK	DATA AND ANSWERS	DESCRIPTIONS AND QUESTIONS
2-127	stomach intestine -logist	"gastr/o" is a combining form meaning _____. "enter/o" is a combining form meaning _____. _____ is a suffix meaning one specializing in.
2-128	"ot/o" "rhin/o" "laryng/o" -logy	_____ is a combining form meaning ear. _____ is a combining form meaning nose. _____ is a combining form meaning throat or larynx. _____ is a suffix meaning the study of.
2-129	Otorhinolaryngology gastroenterologist	_____ is the study of the ear, nose, and throat. A _____ is a physician specializing in the study of the stomach and intestine.
2-130	lymphangiogram (lim'-fan-jee-og-tam)	A lymphangiogram is a picture or record of lymph and blood vessels. This is usually made by taking an x-ray after injecting dye or a similar chemical compound into a blood vessel. "lymph/o" is a combining form meaning lymph. "angi/o" is a combining form meaning blood. -gram is a suffix meaning picture or record. Note that the first "o" is dropped because it precedes another vowel, "a."
2-131	onychomycosis (on'-ik-o-mi-ko-sis)	Onychomycosis is a fungal infection of the nails. "oncy/o" is a combining form meaning nail. "myc/o" is a combining form meaning fungus. -osis is a suffix meaning abnormal condition. Note that one "o" is deleted because two vowels are adjacent.

BLOCK	DATA AND ANSWERS	DESCRIPTIONS AND QUESTIONS
2-132	-gram “angi/o” “lymph/o”	_____ is a suffix meaning picture or record. _____ is a combining form meaning blood. _____ is a combining form meaning lymph.
2-133	fungus condition nails	“myc/o” is a combining form meaning _____. -osis is a suffix meaning _____. “oncy/o” is a combining form meaning _____.
2-134	picture or record of lymph and blood vessels Onychomycosis	A lymphangiogram is a _____ _____ _____. _____ is the abnormal condition of fungal infection of the nails.
2-135		The basic rule is to drop one vowel when two vowels are placed side by side. Ease of pronunciation is always a consideration. However, there are exemptions to this rule in keeping or deleting a vowel. Your instructor will explain when this occurs.
2-136	term prefix, root	Let us now review the eight keys to building medical terms. Key 1 states that a medical _____ can be built by combining a _____ with a word _____.
2-137	term root, suffix	Key 2 states that a medical _____ can be built by combining a word _____ with a _____.
2-138	term prefix, suffix	Key 3 states that a medical _____ can be built by combining a _____ with a _____.
2-139	term root, root	Key 4 states that a medical _____ can be built by combining a word _____ with a word _____.
2-140	term prefix, root suffix	Key 5 states that a medical _____ can be built by combining a _____, a word _____, and a _____.

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BLOCK	DATA AND ANSWERS	DESCRIPTIONS AND QUESTIONS
2-141	term combining form, suffix	Key 6 states that a medical _____ can be built by adding a _____ to a _____.
2-142	term combining form, word root	Key 7 states that a medical _____ can be built by adding a _____ to a _____.
2-143	there are variations of the basic combining forms in developing medical terms	Key 8 states that _____ _____ _____. _____.
2-144		Although the eight keys provide basic rules for developing medical terms, there are many exceptions to each key. We encourage you to make use of printed and electronic resources and the expertise of your instructors to clarify these exceptions.
2-145	head, body, legs, muscle, hair, eyes, ears, and so on. (If you have named others, please use the Internet or other resources to confirm their accuracy.)	The next stage of your training is to learn to build medical terms for the human body systems by using the principles of the eight keys. All of us are familiar with our bodies. Examples of parts of the human body are: _____ _____ _____. (Name as many as you can.) Some, but not all, body systems are covered in the remaining chapters of this book.

Progress Check

A. Multiple Choice

1. A word root meaning red is:
 - a. erythr
 - b. ache
 - c. neur
 - d. phobia
2. A word root meaning development is:
 - a. cysis
 - b. muc
 - c. genesis
 - d. phobia
3. A combining form meaning blood is:
 - a. cardi/o
 - b. bil/i
 - c. neur/o
 - d. angi/o
4. A combining form meaning the ear is:
 - a. oste/o
 - b. ot/o
 - c. oncy/o
 - d. orth/o
5. A prefix meaning to come down is:
 - a. de-
 - b. dis-
 - c. eu-
 - d. an-
6. A prefix meaning half is:
 - a. hemi-
 - b. quadri-
 - c. peri-
 - d. brady-
7. A suffix meaning pain is:
 - a. -cyte
 - b. -ia
 - c. -algia
 - d. -logy
8. A suffix meaning breakdown is:
 - a. -itis
 - b. -lysis
 - c. -al
 - d. -gram

38 PART I The Fundamentals of Personalized Instruction Programs**B. Definitions and Word Components**

	TERM	DEFINITION	PREFIX	WORD ROOT	VOWEL	WORD ROOT	VOWEL	SUFFIX
1.	antitoxin							
2.	biliary							
3.	disinfect							
4.	endometritis							
5.	mucous							
6.	quadriplegia							
7.	zoophobia							
8.	hemophobia							
9.	cerebrospinal							
10.	natal							

C. Medical Terms and Their Definitions

	TERM	DEFINITION
1.		condition of fungal infection of the nails
2.	corectasis	
3.		incision into the spine
4.	pelvimetry	
5.		treatment of the mind or soul
6.	tracheostenosis	
7.		discoloration of the skin
8.	nephropathy	
9.		use of a scope to penetrate the abdomen wall to study the abdominal cavity
10.	albumin	
11.		condition of protrusion of the eyeballs due to a hormonal disorder
12.	dyspareunia	
13.		removal of half of the stomach
14.	presbycusis	
15.		inflammation of the entire brain
16.	hemolysis	
17.		slow breathing
18.	dystocia	
19.		state of well-being
20.	cholecystitis	

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D. Abbreviations

	ABBREVIATION	MEANING
1.	q	
2.	qd	
3.	qod	
4.	Q ___ h	
5.	bid	
6.	tid	
7.	qid	
8.	hs	
9.	ac	
10.	pc	
11.	prn	
12.	ad lib	
13.	stat	