

CHAPTER 4

SYMPTOMATIC AND DIAGNOSTIC TERMS

OBJECTIVES

- 1 Identify common symptomatic and diagnostic suffixes.
- 2 Define common symptomatic and diagnostic terms based on term structure analysis.
- 3 List common terms related to disease.

CHECKLIST

- Complete Chapter 4 Self-Instruction and Programmed Review sections
- Review the Flash Cards related to Chapter 4
- Complete the Chapter 4 Examine Your Understanding exercises
- Complete Medical Record Exercises 4-1 and 4-2
- Practice saying the Chapter 4 terms out loud with the Audio Pronunciation Glossary on the Student Resource CD-ROM
- Complete the Chapter 4 Interactive Exercises on the Student Resource CD-ROM
- Take the Chapter 4 Quiz on the Student Resource CD-ROM
- When you receive 70% or higher on the Quiz, move on to Chapter 5

LOCATION

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pages 199–204



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MEET THE PATIENT Jane Dano seems too young to be having so much trouble. For the past three weeks, this 11-year-old girl has been constantly thirsty and seems to be urinating all of the time. She is even losing weight. Jane's mother is concerned and takes her to Dr. Spaulding for an examination. After laboratory tests showed that there was sugar in her blood and urine, Dr. Spaulding immediately referred Jane to Dr. Gallegos, an endocrinologist, who made the diagnosis of **diabetes mellitus**. In this chapter, you will learn the medical terms for common signs and symptoms and diagnostic terms, such as those used to identify Jane's problem. Later, you will also learn that Jane was hospitalized and cared for by several health professionals, one being a **Nursing Assistant**. Jane's hospital discharge summary is shown in **Medical Record Exercise 4-1**.

Symptomatic and diagnostic suffixes are word endings used in terms that describe **symptoms** (evidence of illness) and **diagnoses** (names of conditions or diseases). The most common of these suffixes are presented in the Self-Instruction sections of this chapter. They are accompanied by selected prefixes and combining forms to build common terms related to symptoms and diagnoses.

Core Term Components

The suffixes and prefixes used in this chapter are listed below. Pertinent combining forms will be added as you progress through programmed learning segments related to each suffix. Study these core term components first, and add those related to each of the suffixes as you work through the chapter.

SUFFIX	MEANING	FLASH CARD ID
-algia, -odynia	pain	S-2
-cele	pouching or hernia	S-3
-emia	blood condition	S-7
-genic	pertaining to origin	S-9
-ia, -ism	condition of	S-14
-iasis	formation or presence of	S-15
-ic, -tic	pertaining to	S-1
-itis	inflammation	S-18
-lepsy	seizure	S-20
-logy	study of	S-22

-malacia	softening	S-23
-mania	condition of abnormal impulse toward or frenzy	S-24
-megaly	enlargement	S-25
-oma	tumor	S-28
-osis	condition or increase	S-30
-penia	abnormal reduction	S-31
-phobia	condition of abnormal fear or sensitivity	S-34
-plegia	paralysis	S-36
-pnea	breathing	S-37
-ptosis	falling or downward displacement	S-38
-rrhage, -rrhagia	to burst forth (usually blood)	S-40
-rrhea	discharge	S-42
-spasm	involuntary contraction	S-45
-stasis	stop or stand	S-46
-y	condition or process of	S-50

PREFIX	MEANING	FLASH CARD ID
a-, an-	without	P-1
auto-	self	P-8
bi-	two or both	P-27
brady-	slow	P-9
de-	from, down, or not	P-10
dia-	across or through	P-11
dys-	painful, difficult, or faulty	P-12
endo-	within	P-14
epi-	upon	P-15
eu-	normal	P-16
hyper-	above or excessive	P-21
hypo-	below or deficient	P-22
macro-	large	P-24
meta-	beyond, after, or change	P-25
micro-	small	P-26

(continued)

PREFIX	MEANING	FLASH CARD ID
neo-	new	P-28
ortho-	straight, normal, or correct	P-29
poly-	many	P-34
tachy-	fast	P-38

SELF-INSTRUCTION: *-algia* and *-odynia* (pain)

Add the following combining forms to your study of *-algia* and *-odynia* before starting the Programmed Review below.

COMBINING FORM	MEANING	FLASH CARD ID
arthr/o	joint	CF-6
cephal/o	head	CF-12
gastr/o	stomach	CF-26
my/o	muscle	CF-40
oste/o	bone	
ot/o	ear	

PROGRAMMED REVIEW: *-algia* and *-odynia* (pain)

ANSWERS	REVIEW
ending -algia, -odynia	4.1 A symptomatic suffix is a term _____ used to describe evidence of illness. Pain is one of the most common symptoms of illness. The two suffixes that refer to pain are _____ and _____.
joint suffix, pain arthralgia	4.2 Using the combining form <i>arthr/o</i> , meaning _____, combined with <i>-algia</i> , the _____ meaning _____, the term for joint pain is _____.
bone ostealgia osteodynia	4.3 Using <i>oste/o</i> , the combining form for _____, two terms for bone pain are _____ and _____.


muscle myalgia myodynia	4.4 Using <i>my/o</i> , the combining form meaning _____, two terms for muscle pain are _____ and _____.
head cephalalgia, cephalodynia	4.5 <i>cephal/o</i> is a combining form referring to the _____. Using the suffixes meaning pain, two terms for headache are _____ and _____.
pain, stomach epi- upon, pain stomach	4.6 Gastralgia is a symptomatic term that describes a condition of _____ in the _____. In epigastralgia, the addition of _____, the prefix meaning _____, modifies this term to indicate that the _____ is in the epigastrium, which is the area of the abdomen overlying the _____.
ot/o otalgia, otodynia	4.7 The combining form for ear is _____. When a patient describes an earache, the medical term noted will either be _____ or _____.

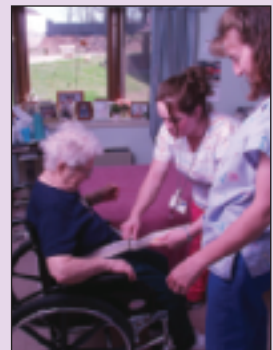


Health Care Professionals

MEET THE NURSING ASSISTANT

Nursing assistants are well-trained members of the health care team who assist nurses in providing basic nursing care to help meet the needs of patients, clients, and residents in a variety of health care settings. These needs include hygiene, safety, comfort, nutrition, exercise, and elimination, as well as basic emotional needs. Nursing assistants ensure that humanistic care, or care that places the emphasis on each person's unique needs, is given.

 A more detailed description of nursing assistant as a health care career can be found on the Student Resource CD-ROM and at the companion website at www.thePoint.lww.com/WillisQC.



SELF-INSTRUCTION: -cele (pouching or hernia)

Add the following combining forms to your study of *-cele* before starting the Programmed Review below.

COMBINING FORM	MEANING	FLASH CARD ID
cyst/o	bladder or sac	CF-18
hydr/o	water	CF-31
rect/o	rectum	
varic/o	swollen, twisted vein	

PROGRAMMED REVIEW: -cele (pouching or hernia)

ANSWERS	REVIEW
pouching hernia	4.8 Hernia is a term used to explain the pouching of a part from its normal location. Common types include inguinal hernia (pouching of the intestine through layers of the abdominal wall in the groin area) and hiatal hernia (protrusion of part of the stomach upward through the hiatus, an opening in the diaphragm). The diagnostic suffix <i>-cele</i> is also used in several terms describing a/an _____ or _____.
water hernia hydrocele varicocele	4.9 In the male testicle, two terms using <i>-cele</i> name common afflictions. <i>hydr/o</i> is the combining form meaning _____. Combined with <i>-cele</i> , it forms the term that describes a pouching or _____ of fluid in the testicle: _____ (Fig. 4-1). When <i>varic/o</i> , a combining form referring to a swollen, twisted vein, is linked to <i>-cele</i> , it forms the term for swollen, twisted veins near the testicle, called _____. Notice that there is no direct reference to the testicle in either term.

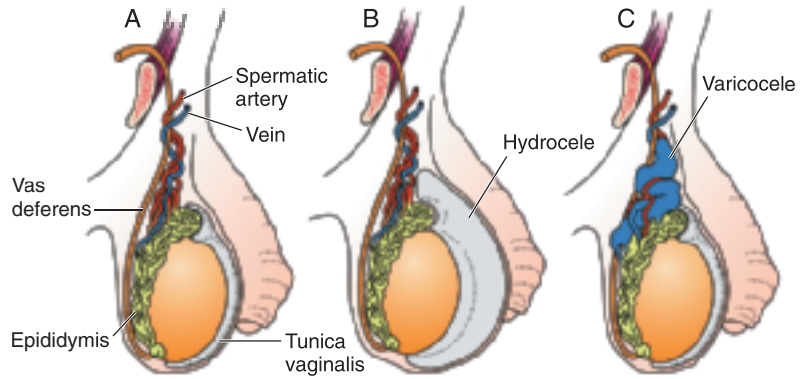


FIGURE 4-1 Testes. **A.** Normal testes and appendages. **B.** Hydrocele. **C.** Varicocele

pouching

pouching

bladder
cystocele
rectum
rectocele

4.10 Related to females, *-cele* is used in terms that describe a sagging or _____ of pelvic organs into the vagina as a result of weakening of the muscles and ligaments that provide support, a condition known as pelvic floor relaxation (Fig. 4-2). Interestingly, there is no direct reference to the vagina in these terms, only the link of *-cele* to the combining form naming the structure that is _____ into it. Knowing this, the term that describes a sagging or pouching of the bladder into the vagina links *cyst/o*, the combining form meaning sac or _____, with *-cele*, in the term _____. Likewise, *rect/o*, a combining form meaning _____, is used in the term describing the pouching of the rectum into the vagina, or _____.

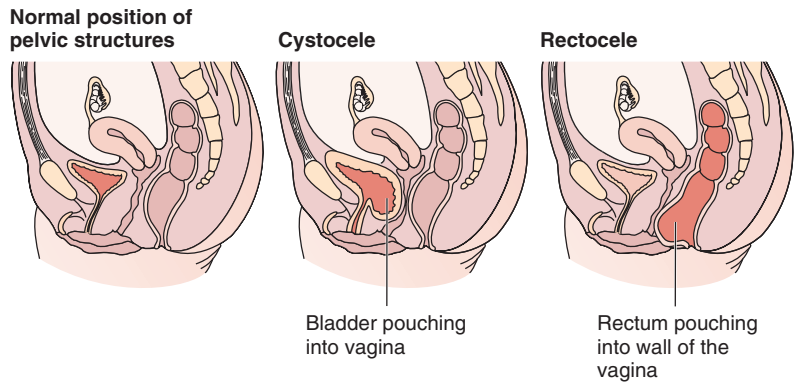


FIGURE 4-2 Two types of pelvic floor relaxation, causing pouching (protrusion) into the vagina.

SELF-INSTRUCTION: -ia (condition of)

Add the following combining forms to your study of *-ia* before starting the Programmed Review below.

COMBINING FORM	MEANING	FLASH CARD ID
cardi/o	heart	CF-11
dips/o	thirst	
phag/o	eat or swallow	CF-47
phas/o	speech	CF-48
phren/o	diaphragm, mind	
pneumon/o	air or lung	CF-51
psych/o	mind	CF-53
schiz/o	split	
thym/o	thymus gland or mind	
ur/o	urine	CF-67

PROGRAMMED REVIEW: -ia (condition of)


ANSWERS	REVIEW
condition of	4.11 The simple suffix <i>-ia</i> is used in various symptomatic and diagnostic terms to indicate a/an _____. The root that it modifies is key to the definition of the term.
slow heart condition of bradycardia tachycardia	4.12 <i>brady-</i> is a prefix meaning _____. Combined with <i>cardi</i> , the root meaning _____, and <i>-ia</i> , meaning _____, the term for the condition of a slow heart rate is _____. In comparison, the condition of a fast heart rate is _____. Both bradycardia and tachycardia are considered arrhythmias (loss or abnormality of rhythm, especially irregularity of the heartbeat). The synonym for arrhythmia is _____ (formed by substituting the prefix <i>a-</i> , meaning _____, with the prefix <i>dys-</i> , meaning painful, difficult, or _____).
dysrhythmia without faulty	

lung -ia	<p>4.13 Pneumonia, the term for a condition of lung infection, is formed by the link of <i>pneumon/o</i>, meaning _____, with _____, the suffix indicating a condition of.</p>
condition of speech, without aphasia difficult dysphasia	<p>4.14 The term describing the inability to speak is formed by combining <i>-ia</i>, the suffix meaning _____, with <i>phas/o</i>, the combining form meaning _____, and <i>a-</i>, the prefix meaning _____. The term is _____. A change of the prefix in aphasia from <i>a-</i>, meaning without, to <i>dys-</i>, meaning painful, faulty, or _____, forms the term for the condition of difficulty speaking: _____.</p>
mind mind split condition of mind painful, difficult faulty, mind condition of	<p>4.15 <i>psych/o</i> is a combining form meaning _____. <i>phren/o</i>, meaning diaphragm, and <i>thym/o</i>, meaning thymus gland, are combining forms that also mean _____. For example, in the term schizophrenia, <i>schiz/o</i>, a combining form meaning _____, is linked to <i>phren/o</i> and <i>-ia</i>, the suffix meaning _____, to name the mental illness in which the _____ is said to be split from reality, as evidenced by disorganized thinking, delusions, hallucinations, and other psychotic symptoms. Dysthymia, a term for mild depression, was formed by a link of <i>dys-</i>, the prefix meaning _____, _____, or _____, to <i>thym/o</i>, meaning _____, and <i>-ia</i>, the suffix meaning _____.</p>
swallow without condition of	<p>4.16 <i>phag/o</i> means to eat or _____. Modified by <i>a-</i>, the prefix meaning _____, and <i>-ia</i>, the suffix meaning _____, the term that describes the condition in which one is unable to</p>

aphagia
dysphagia

swallow is _____. The condition of difficulty eating or swallowing is therefore termed _____.

prefix
many
urine
polyuria
thirst
polydipsia

4.17 When *-ia* is combined with *poly-*, a/an _____ meaning _____, to modify *ur/o*, the combining form meaning _____, it forms the term for the condition of excessive urination: _____. When *-ia* is linked to *poly-* and *dips/o*, a combining form meaning _____, it forms the term for excessive thirst, or _____. Both of these conditions are common symptoms of diabetes mellitus (see  Vital Statistics: Diabetes Mellitus).



Vital Statistics

DIABETES MELLITUS (*dī-ă-bē'tēz mel-i-tus*)

Origin: Diabetes is a Greek word for siphon (which includes *dia-*, meaning across or through, and *bain/o*, to pass or go); mellitus is a Latin word for sweetened honey. From earliest accounts, patients with diabetes mellitus were said to pass large amounts of sweet-tasting urine that often attracted ants and other insects.

Diabetes mellitus (DM) is a metabolic disorder caused by the absence or insufficient production of insulin (a hormone secreted by the pancreas), which results in the inability of tissue cells to absorb sugar (glucose) in the blood. Insulin (*in'sŭ-lin*), originating from the Latin word for island, is a hormone secreted by the beta cells of the islets of Langerhans of the pancreas that regulates the metabolism of glucose by allowing it to move from the blood into cells to produce energy. Due to the absence of or insufficient function of insulin, glucose levels rise in the blood (hyperglycemia) and pass into the urine (glucosuria), and cells are starved of energy.

There are three main forms of diabetes mellitus: type 1, type 2, and gestational diabetes. These forms have similar signs and symptoms but different causes. In type 1 diabetes mellitus (*tīp 1 dī-ă-bē'tēz mel-i-tŭs*), no beta cell production of insulin occurs, and the patient is dependent on insulin for survival. In type 2 diabetes mellitus (*tīp 2 dī-ă-bē'tēz mel-i-tŭs*), either the body produces insufficient insulin or insulin resistance (a defective use of the insulin that is produced) occurs; the patient usually is not dependent on insulin for survival. Gestational diabetes occurs during pregnancy but typically resolves after the baby is delivered.

Recalling our patient, Jane Dano, at the beginning of the chapter, polyuria (excessive urination) and polydipsia (excessive thirst) are common symptoms of diabetes mellitus.

Screening for diabetes mellitus includes testing for the presence of sugar in urine, such as part of a urinalysis. The diagnosis is confirmed by measure of glucose in the blood. Treatment is centered on maintenance of a normal level of glucose in the blood to alleviate symptoms and reduce the risk of complications. This includes a healthy diet and exercise regimen, medications that boost the efficiency of insulin in type 2 diabetics, and insulin injections for patients with type 1 diabetes mellitus (and some patients with type 2 diabetes mellitus).

SELF-INSTRUCTION: *-emia* (blood condition)

Add the following combining forms to your study of *-emia* before starting the Programmed Review below.

COMBINING FORM	MEANING	FLASH CARD ID
glyc/o	sugar (glucose)	
isch/o	to hold back	
leuk/o	white	CF-35
lip/o	fat	CF-4
ox/o	oxygen	

PROGRAMMED REVIEW: *-emia* (blood condition)

ANSWERS	REVIEW
blood condition	4.18 Evolved from the Greek word haima, <i>-emia</i> is the suffix that means _____. There are various terms ending in <i>-emia</i> . You'll recall it was presented in Chapter 1 in the term hyperlipemia, which refers to a blood condition of _____.
excessive fat	4.19 Glycemia, the term for the presence of sugar in the blood, is formed by linking <i>-emia</i> to <i>glyc/o</i> , a combining form

sugar (glucose)
hyper-

hyperglycemia
below
deficient
hypoglycemia

meaning _____. Further modification of this term by the addition of _____, the prefix meaning above or excessive, forms the term that describes an excessive level of blood sugar, or _____. When modified by *hypo-*, the prefix meaning _____ or _____, the term for a condition of low blood sugar is _____.

deficient

hypoxemia

4.20 *ox/o* is a combining form meaning oxygen. Combined with *hypo-*, the prefix meaning below or _____, and the suffix *-emia*, it forms the term that describes a deficient level of oxygen in the blood, known as _____. (Apply the rule explained in Chapter 1, noting that occasionally, when a prefix ends in a vowel and the root begins with a vowel, the final vowel is dropped from the prefix.)

blood condition
without

4.21 Anemia is a diagnostic term formed by the link of *-emia*, meaning _____, to *an-*, the prefix meaning _____. The components in this term give a hint to the name of this condition of reduced numbers of red blood cells and their diminished ability to transport oxygen to the tissues.

combining
form, white, -emia

white

4.22 In leukemia, the link of *leuk/o*, a/an _____ meaning _____, with _____, the suffix meaning blood condition, forms the term that identifies malignant (cancerous) disease of the blood-forming organs, marked by abnormal leukocytes (or _____ blood cells).

back
blood condition
pertaining to

4.23 Ischemia is a medical term describing the loss of blood flow or supply of blood to tissue, as caused by narrowing or occlusion of a vessel. It is formed by linking *isch/o*, a combining form meaning to hold _____, with *-emia*, the suffix meaning _____. Ischemic, the adjective form of the term, was formed by replacing *-ia* with *-ic*, the suffix meaning _____.

SELF-INSTRUCTION: *-genic* (pertaining to origin)

Add the following combining forms to your study of *-genic* before starting the Programmed Review below.

COMBINING FORM	MEANING	FLASH CARD ID
bronch/o	bronchus (airway)	
iatr/o	treatment	CF-33

PROGRAMMED REVIEW: *-genic* (pertaining to origin)

ANSWERS	REVIEW
origin	4.24 <i>-genic</i> is a suffix meaning pertaining to _____. Combined with <i>bronch/o</i> , a combining form referring to the _____, that which originates in the bronchus is called _____. When <i>iatr/o</i> , a combining form meaning _____, is linked to <i>-genic</i> , it forms the term that pertains to that which is produced as a result of treatment: _____.
bronchus (airway)	
bronchogenic	
treatment	
iatrogenic	

SELF-INSTRUCTION: *-itis* (inflammation)

Add the following combining forms to your study of *-itis* before starting the Programmed Review.

COMBINING FORM	MEANING	FLASH CARD ID
appendic/o	appendix	
dermat/o	skin	CF-21
hepat/o	liver	CF-29
metr/o, metri/o, uter/o	uterus	
nas/o, rhin/o	nose	CF-43
oophor/o	ovary	
pharyng/o	pharynx or throat	
phleb/o, ven/o	vein	CF-68
salping/o	uterine or fallopian tube	CF-56
thromb/o	clot	CF-64
tonsill/o	tonsil	
vagin/o	vagina	

PROGRAMMED REVIEW: *-itis* (inflammation)

ANSWERS	REVIEW
inflammation	<p>4.25 <i>-itis</i>, meaning _____, is one of the most common suffixes used in symptomatic and diagnostic terms. When attached to a root, it indicates that the given structure or tissue is _____. Note that there are _____ "m"s in inflammation and only _____ in inflamed. Characteristics of inflammation include redness, swelling, and pain. In dermatitis, the inflammation is of the _____ (Fig. 4-3).</p>
inflamed	
two, one	
skin	



FIGURE 4-3 Contact dermatitis. Redness, swelling, and various lesions on the skin occur as a result of exposure to lanolin.

<p>rhin/o</p> <p>rhinitis</p> <p>throat</p> <p>pharyngitis</p> <p>inflammation</p> <p>tonsil(s)</p> <p>ear</p> <p>otitis</p> <p>inflammation</p> <p>middle</p>	<p>4.26 <i>-nas/o</i> and _____ are combining forms referring to the nose. Using this second combining form, the term for inflammation of the nose is _____. Using <i>pharyng/o</i>, the combining form for _____, the term for inflammation of the throat is _____. Tonsillitis describes _____ of the _____. When <i>-itis</i> is linked to <i>ot/o</i>, the combining form meaning _____, it forms the term for inflammation of the ear, or _____. Otitis externa specifically indicates that the inflammation is in the outer ear canal, whereas otitis media indicates that the _____ is in the _____ ear. (<i>medi/o</i>, you'll recall from Chapter 2, is a combining form meaning middle.)</p>
<p>condition of, lung</p> <p>lung</p> <p>pneumonitis</p> <p>inflammation</p> <p>bronchus</p>	<p>4.27 You'll recall that pneumonia is a term describing a/an _____ the _____ from infection. This condition of infection, typically from bacteria or viruses, causes inflammation; however, the specific term describing inflammation of the lung, as commonly caused by hypersensitivity to chemicals or dust, is formed by a link of <i>pneumon/o</i>, the combining form meaning air or _____, with the suffix meaning inflammation: _____.</p> <p>Bronchitis refers to _____ of the bronchi, which are the airways in the lungs. The singular form of bronchi is _____.</p>
<p>joint(s)</p> <p>inflammation</p> <p>bone, joint(s)</p>	<p>4.28 Arthritis is a general term that describes inflammation of the _____. The additional combining form in the term osteoarthritis indicates that the _____ includes the _____ and _____.</p>

liver hepatitis	<p>4.29 <i>hepat/o</i> is the combining form meaning _____. The term for inflammation of the liver is _____. Hepatitis A, B, and C are the most common types.</p>
appendix appendicitis	<p>4.30 <i>appendic/o</i> is the combining form meaning _____. Inflammation of the appendix is _____.</p>
phleb/o phlebitis clot inflammation, vein	<p>4.31 You'll recall that the combining forms for vein are <i>ven/o</i> and _____. Using this second combining form, the term for inflammation of a vein is _____. In thrombophlebitis, the additional link to <i>thromb/o</i>, meaning _____, modifies the term to describe the _____ of a/an _____ with formation of a clot.</p>
inflammation vaginitis uterine (or fallopian) tube salpingitis ovary oophoritis within uterus endometritis	<p>4.32 The suffix <i>-itis</i> is used to name _____ of female reproductive organs. Inflammation of the vagina, the canal that leads to the uterus, is called _____. <i>salping/o</i>, the combining form meaning _____, is used to name an inflammation of the uterine tube or tubes: _____. <i>oophor/o</i>, a combining form meaning _____, is used in the term for inflammation of the ovary or ovaries: _____. <i>endo-</i> is a prefix meaning _____. When combined with <i>metr/o</i>, a combining form meaning _____, and modified by <i>-itis</i>, it forms _____, the term describing an inflammation of the endometrium (the tissue lining the uterus). Pelvic inflammatory disease (PID) describes inflammation of multiple organs in the pelvic cavity; this condition usually involves the fallopian tubes, ovaries, and endometrium and is most often caused by bacteria.</p>

SELF-INSTRUCTION: -malacia (softening)

Add the following combining forms to your study of *-malacia* before starting the Programmed Review below.

COMBINING FORM	MEANING	FLASH CARD ID
chondr/o	cartilage	
laryng/o	larynx (voice box)	
trache/o	trachea (windpipe)	

PROGRAMMED REVIEW: -malacia (softening)


ANSWERS	REVIEW
-malacia softening bone	4.33 The suffix meaning softening is _____. One of the most common terms in which <i>-malacia</i> is used is osteomalacia, the term for _____ of _____. This condition, known as rickets in children, is caused by calcium and vitamin D deficiency.
cartilage chondromalacia	4.34 <i>chondr/o</i> is a combining form meaning _____. The term for softened cartilage is _____.
trachea (windpipe) tracheomalacia laryngomalacia	4.35 <i>trache/o</i> is the combining form for the _____. The disorder of the trachea that causes it to be abnormally collapsible (softened) due to the lack of a structural framework is called _____. A similar term relating to a softened (collapsible) larynx is _____.

SELF-INSTRUCTION: -mania (condition of abnormal impulse toward or frenzy)

Add the following combining forms to your study of *-mania* before starting the Programmed Review.

COMBINING FORM	MEANING	FLASH CARD ID
necr/o	death	CF-44

PROGRAMMED REVIEW: *-mania* (condition of abnormal impulse toward or frenzy)

ANSWERS	REVIEW
abnormal impulse toward death necromania	4.36 <i>-mania</i> appears as a word or suffix related to a condition of _____ or frenzy. When linked to <i>necr/o</i> , a combining form meaning _____, it forms the term referring to a condition of abnormal impulse toward death, or _____.
frenzy condition of pertaining to two, both mania	4.37 Mania, as a stand-alone term, refers to a state of abnormal elation and increased activity or _____. The adjective for mania is formed by replacing <i>-ia</i> , the suffix meaning _____, with <i>-ic</i> , the suffix meaning _____. Manic depression is a mental illness also known as bipolar disorder. The prefix <i>bi-</i> , meaning _____ or _____, gives hints to the two mood swings that are characteristic of the disorder: the “up” of abnormal elation and increased activity in _____ and the extreme “down” state of depression (see  Vital Statistics: Mental Illness).



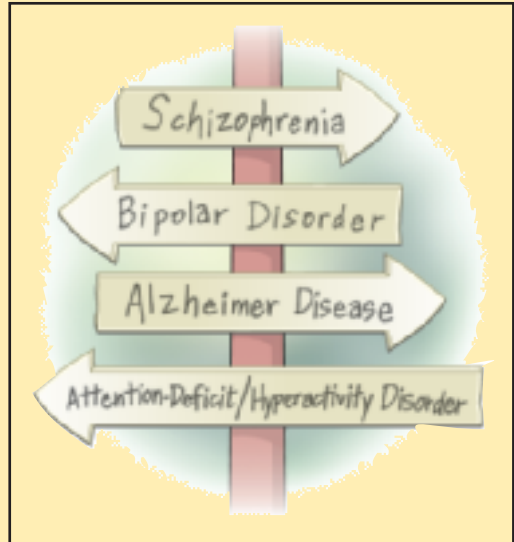
MEET THE PATIENT Steve Sanchez is a 45-year-old patient who suffers from bipolar disorder, which is a **mental illness**. Also known as manic depression, bipolar disorder is an affective disorder that is characterized by mood swings of mania and depression (extreme up and down states). Dr. Spaulding has referred him to several health care practitioners for care, including a psychologist for psychotherapy, a psychiatrist for drug therapy, and an **Occupational Therapist**. His occupational therapist works with an occupational therapy assistant (OTA); together, they help Steve secure a comfortable, affordable living situation and a low-stress job, as well as membership in a peer support group, all in an effort to help him lead a meaningful life.



Vital Statistics MENTAL ILLNESS

Mental illness refers to any disorder of the brain or mind that alters thought, mood, or behavior. Common classifications of mental illness include:

- **Mood disorders** – conditions that affect how a person feels, also called **affective disorders**. Major depression and bipolar disorder are examples of mood disorders.
- **Anxiety disorders** – conditions of emotional distress. Generalized anxiety disorder (GAD) is the most common anxiety disorder. Other types include obsessive-compulsive disorder, panic disorder, phobia, and posttraumatic stress disorder (PTSD).
- **Cognitive disorders** – conditions impairing one's ability to think and reason. Alzheimer disease is an example of a cognitive disorder.
- **Developmental disorders** – mental disabilities commonly diagnosed in childhood. Attention-deficit/hyperactivity disorder (ADHD) and autism are examples.
- **Eating disorders** – disturbances in eating behavior. Anorexia nervosa and bulimia nervosa are common eating disorders.
- **Substance abuse disorders** – mental disorders resulting from abuse of substances such as drugs, alcohol, and other toxins that result in personal and social dysfunction. Substance abuse disorders are identified by the abused substance, such as alcohol abuse, amphetamine abuse, opioid (narcotic) abuse, and polysubstance abuse.
- **Psychotic disorders** – mental disorders that impair one's ability to recognize reality. Schizophrenia is an example of a psychotic disorder.



ON CLOSER INSPECTION Anorexia vs. Anorexia Nervosa

Anorexia is a common symptomatic term indicating that one is *without an appetite*. It is not to be confused with anorexia nervosa, the term for an eating disorder in which the individual has abnormal perceptions about his or her body weight, evidenced by an overwhelming fear of becoming fat that results in a refusal to eat and body weight well below normal.



Health Care Professionals

MEET THE OCCUPATIONAL THERAPIST

Occupational therapists (OTs) work with individuals who suffer from mentally, physically, developmentally, or emotionally disabling conditions. OTs use treatments to develop, recover, or maintain the daily living and work skills of their patients. The therapist's goal is to help clients have independent, productive, and satisfying lives. OTs provide services in a wide variety of settings to individuals of all ages so that they can engage in their daily occupations of work, productive activity, self-care, and leisure/play. They serve individuals, groups, and populations with illnesses and disabilities. In addition, OTs provide wellness and prevention services to improve health and overall quality of life.



A more detailed description of occupational therapy as a health care career can be found on the Student Resource CD-ROM and at the companion website at www.thePoint.lww.com/WillisQC.

SELF-INSTRUCTION: *-megaly* (enlargement)

Add the following combining forms to your study of *-megaly* before starting the Programmed Review below.

COMBINING FORM	MEANING	FLASH CARD ID
acr/o	extremity or topmost	CF-2
megal/o	large	
splen/o	spleen	

PROGRAMMED REVIEW: *-megaly* (enlargement)

ANSWERS	REVIEW
	4.38 <i>-megaly</i> , the compound suffix (formed by a link of <i>-y</i> , meaning condition or process of, to <i>megal/o</i> , meaning large)

enlargement
liver
hepatomegaly
spleen
splenomegaly

describes _____. Linked to *hepat/o*, the combining form meaning _____, the term for an enlargement of the liver is _____. *splen/o* is the combining form for _____. An enlargement of the spleen is called _____.

enlargement
heart
large

4.39 Cardiomegaly refers to _____ of the _____ (also termed megalocardia). *megal/o* is a combining form meaning _____.

extremity
enlargement
acromegaly
adjective

4.40 The condition of enlarged extremities due to hypersecretion of the pituitary growth hormone after puberty was coined by linking *acr/o*, the combining form meaning topmost or _____, with *-megaly*, meaning _____, to form the term _____ (Fig. 4-4). Acromegalic is the _____ form of the term.



FIGURE 4-4 Enlarged hands and facial features in a patient with acromegaly.

SELF-INSTRUCTION: -osis (condition or increase)

Add the following combining forms to your study of *-osis* before starting the Programmed Review below.

COMBINING FORM	MEANING	FLASH CARD ID
ather/o	fatty, or lipid, paste	CF-7
arteri/o	artery	
cyt/o	cell	CF-19
isch/o	to hold back	
kyph/o	humpbacked	
lord/o	bent	
nephr/o	kidney	CF-45
neur/o	nerve	
scoli/o	twisted	
scler/o	hard	CF-58
sten/o	narrow	CF-60
vertebr/o, spondyl/o	vertebra	CF-69

PROGRAMMED REVIEW: -osis (condition or increase)

ANSWERS	REVIEW
condition, increase	4.41 Many symptomatic and diagnostic terms use the suffix <i>-osis</i> to indicate a/an _____ or _____.
kyph/o kyphosis bent lordosis pertaining to	4.42 <i>-osis</i> is used in several terms to name conditions of abnormal curvature of the spine. The combining form meaning humpback is _____. Combined with <i>-osis</i> , it forms the term for the abnormal posterior curvature of the thoracic spine, known as a humpback condition: _____. <i>lord/o</i> , a combining form meaning _____, is used in the term to identify an anterior bend or sway back condition of the lumbar spine called _____. Lordotic is a term meaning _____. _____ lordosis. Scoliosis, the term

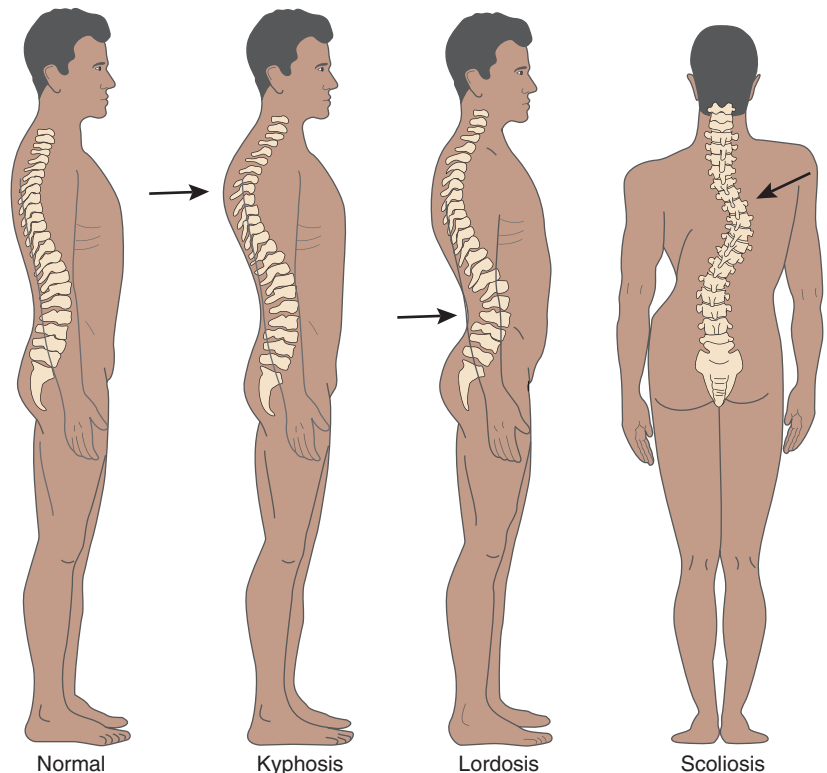


FIGURE 4-5 Normal spine compared with kyphosis, lordosis, and scoliosis.

describing the condition of a lateral S-shaped curve of the spine, is formed by linking *-osis* to *scoli/o*, the combining form meaning _____ (Fig. 4-5).

twisted

condition, increase
nerve

mind

4.43 Neurosis, a general term formed by a link of *-osis*, meaning _____ or _____, to *neur/o*, a combining form meaning _____, describes any mental condition in which anxiety is a prominent feature. Psychosis is a condition of the _____ that is characterized by a distortion of reality and the inability to communicate or function within one's environment (see Vital Statistics: Mental Illness).

<p>kidney</p> <p>nephrosis</p> <p>spondyl/o</p> <p>spondylosis</p>	<p>4.44 Some conditions involve degeneration (deterioration) of tissues. <i>nephr/o</i>, a combining form for _____, combined with <i>-osis</i>, forms the term that defines the condition of degeneration of the renal tubules: _____.</p> <p>The combining forms for vertebra are <i>vertebr/o</i> and _____. Use of the latter combining form linked to <i>-osis</i> forms the term describing a condition of the vertebrae (due to joint degeneration): _____.</p>
<p>inflammation</p> <p>endometriosis</p> <p>increase</p>	<p>4.45 Recall from earlier study that endometritis is the term for _____ of the endometrium (tissue lining the uterus). Replacing <i>-itis</i> with <i>-osis</i> changes the term to _____, indicating a condition or _____ of the endometrium. The precise definition describes the migration of portions of the endometrium outside the uterine cavity. Once again, the suffix is a key component that modifies and gives essential meaning to the term.</p>
<p>increase, large</p> <p>increase, small</p> <p>increase, white</p>	<p>4.46 <i>-osis</i> refers to an increase in the following terms:</p> <p>macrocytosis: _____ of _____ (red) cells;</p> <p>microcytosis: _____ of _____ (red) cells;</p> <p>leukocytosis: _____ of _____ cells.</p>
<p>hard</p> <p>sclerosis</p> <p>condition</p> <p>increase, arteries</p> <p>fatty (lipid) paste</p>	<p>4.47 When <i>-osis</i> is combined with <i>scler/o</i>, the combining form meaning _____, it forms the general term for a condition or increase of hardened tissue: _____.</p> <p>In arteriosclerosis, the _____ or _____ is of hardened _____. <i>ather/o</i>, a combining form meaning _____, is used in atherosclerosis, a term specifically referring to the</p>

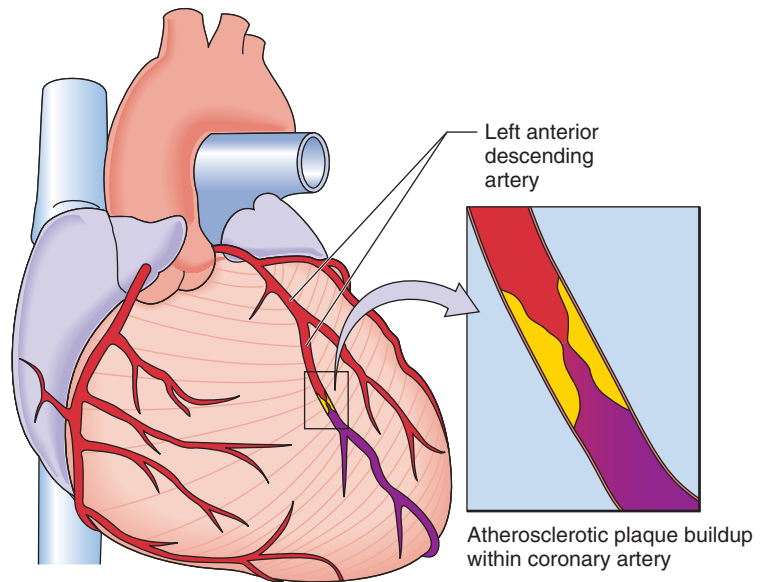


FIGURE 4-6 Coronary artery disease (CAD).

pertaining to

atherosclerotic

hardening of fatty (lipid) paste within the walls of arteries. Using *-ic*, the suffix meaning _____, the adjective form of atherosclerosis is _____. When hardened fatty paste (atherosclerotic plaque) builds up within the wall of a blood vessel, it can have many cumulative ill effects. Atherosclerosis within the coronary arteries causes coronary artery disease (CAD) (Fig. 4-6).

narrow

condition

stenosis

adjective

4.48 *sten/o*, a combining form meaning _____, combined with *-osis* forms the term to describe a/an _____ or increase of narrowing: _____. Stenosis is a general term used in reference to any abnormal narrowing of a structure, such as an artery or heart valve. Stenotic is the _____ form of the term. Atherosclerotic plaque buildup within the walls of blood vessels causes stenosis.

condition, increase
clot

stenosis

4.49 Thrombosis, a term formed by a link of *-osis*, meaning _____ or _____, to *thromb/o*, a combining form meaning _____, describes a condition of stationary clot formation within the heart or a blood vessel. Often when a thrombus (clot) forms, it causes a condition of narrowing, or _____. It can also cause a plug, known as an occlusion (Fig. 4-7).

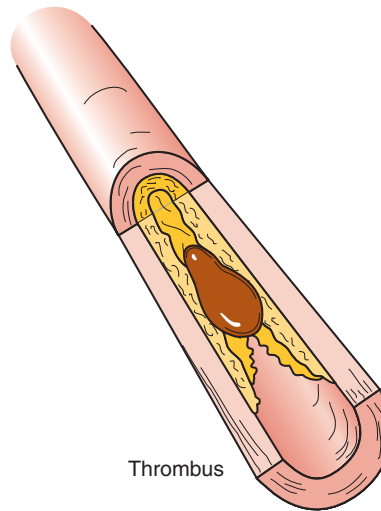


FIGURE 4-7 Thrombus within a blood vessel, causing occlusion.

back

narrowing
clot

death
necrosis

4.50 You'll recall from earlier study of *-emia* that ischemia is a condition in which blood is held _____. This occurs in a blood vessel when there is a loss of blood flow for any reason but commonly because of stenosis (a condition of _____) or thrombosis (a condition of _____ formation). Prolonged ischemia, caused by the occlusion of a blood vessel, results in the loss of oxygenated blood to tissue cells. *necr/o*, the combining form meaning _____, is used to describe a condition of tissue death known as _____. The scar left by

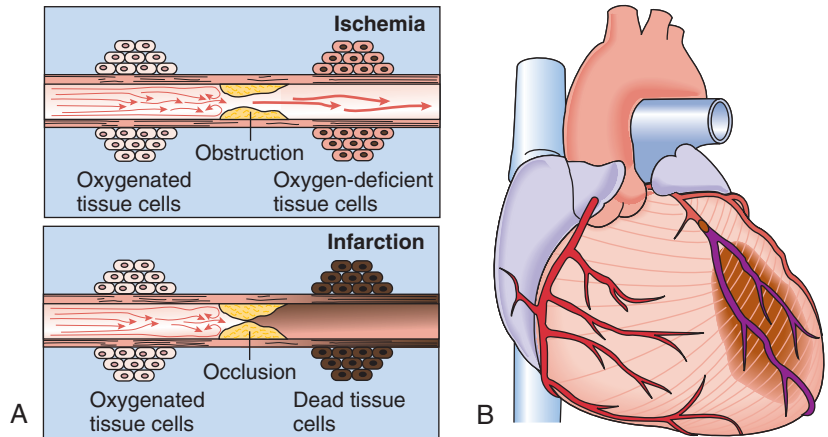


FIGURE 4-8 **A.** Effects of ischemia (reduced blood flow). **B.** Myocardial infarction (MI) (darkened area showing dead heart muscle tissue) caused by total occlusion of the anterior descending branch of the left coronary artery.

muscle

necrosis is called an infarct. Myocardial pertains to heart _____. Myocardial infarction (MI) is the medical term for heart attack, which describes events that lead to the scars left by the death of heart muscle tissue (Fig. 4-8).

SELF-INSTRUCTION: *-iasis* (formation or presence of)

Add the following combining forms to your study of *-iasis* before starting the Programmed Review below.

COMBINING FORM	MEANING	FLASH CARD ID
chol/e	bile	CF-14
lith/o	stone	

PROGRAMMED REVIEW: *-iasis* (formation or presence of)

ANSWERS	REVIEW
condition, increase	4.51 You have just studied terms modified by <i>-osis</i> , the suffix meaning _____ or _____. A similar suffix that refers to a condition characterized by a

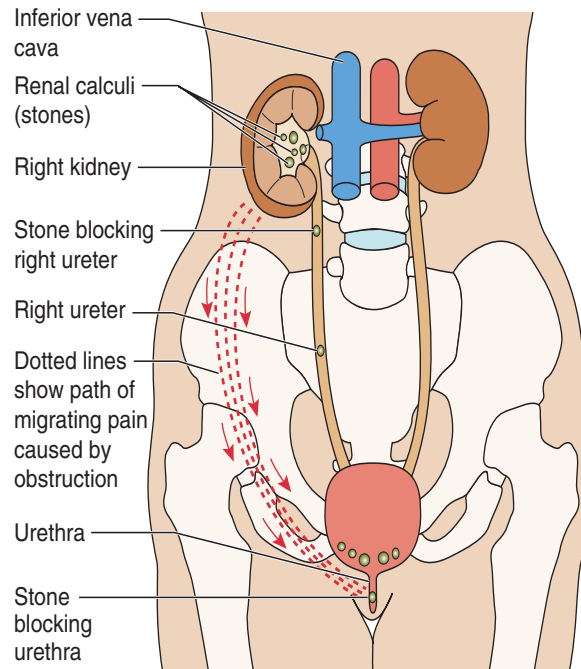


FIGURE 4-9 Nephrolithiasis (kidney stone formation).

-iasis
stone

lithiasis
formation, presence
small

ren/o, kidney

kidney

formation or presence of is _____. When *-iasis* is linked to *lith/o*, a combining form meaning _____, it forms the term referring to the formation or presence of a stone or stones: _____. Microlithiasis refers to the _____ or _____ of a stone that is _____ in size. Another term for stone is calculus. Recall that the combining forms meaning kidney are *nephr/o* and _____. Renal calculi are _____ stones. Nephrolithiasis indicates the presence of one or more _____ stones (Fig. 4-9).

bile

formation
presence, stones

4.52 *chol/e* is a combining form meaning _____. Bile is produced in the liver and stored in the cholecyst, or gallbladder. (Gall, a synonym for bile, refers to its bitterness.) Cholelithiasis refers to the _____ or _____ of one or more bile or gall _____.

SELF-INSTRUCTION: -lepsy (seizure)

Add the following combining form to your study of *-lepsy* before starting the Programmed Review below.

COMBINING FORM	MEANING	FLASH CARD ID
narc/o	stupor or sleep	CF-42

PROGRAMMED REVIEW: -lepsy (seizure)

ANSWERS	REVIEW
-lepsy prefix upon seizure	4.53 A seizure is a sudden, transient disturbance in brain function resulting from the abnormal firing of nerve impulses. The suffix meaning seizure is _____. The term epilepsy, a condition characterized by recurrent seizures, was formed by the combination of <i>epi-</i> , the _____ meaning _____, with <i>-lepsy</i> , the suffix meaning _____.
sleep narcolepsy	4.54 When <i>narc/o</i> , a combining form meaning stupor or _____, is combined with <i>-lepsy</i> , it forms the term describing the sleep disorder characterized by a sudden, uncontrollable need to sleep: _____.

SELF-INSTRUCTION: -oma (tumor)

Add the following combining forms to your study of *-oma* before starting the Programmed Review.

COMBINING FORM	MEANING	FLASH CARD ID
aden/o	gland	CF-3
carcin/o	cancer	CF-10
fibr/o	fiber	
melan/o	black	CF-39
onc/o	tumor	
plas/o	formation	CF-50
sarc/o	flesh	CF-57

PROGRAMMED REVIEW: -oma (tumor)

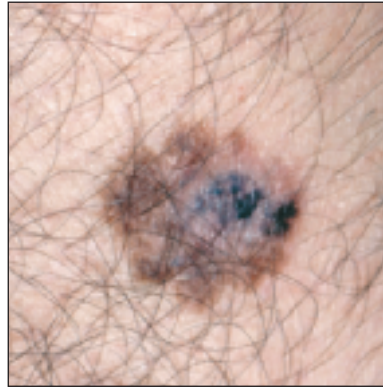
ANSWERS	REVIEW
tumor formation faulty new neoplasia	<p>4.55 -oma is a diagnostic suffix meaning _____. Tumors form as the result of an abnormal and uncontrolled growth of cells. Cells change from normal (typical) into atypical forms, including tumor formation (neoplasm). <i>plas/o</i> is a combining form meaning _____, and <i>dys-</i> is a prefix meaning bad, difficult, or _____. Dysplasia is the term used to describe abnormal cell and tissue development, and neoplasia, a condition of _____ formation, is the term used to describe the formation of cells and tissue into tumor. Cancerous tumors are called malignant neoplasia, and noncancerous tumors are called benign _____.</p>
-oma carcinoma tumor(s)	<p>4.56 Again, the suffix for tumor is _____. Linked to <i>carcin/o</i>, a combining form meaning cancer, the common term for a cancerous (malignant) epithelial tumor is _____. Squamous cell carcinoma (SCC) and basal cell carcinoma (BCC), therefore, are skin cancer _____ (Fig. 4-10).</p> <div data-bbox="606 1193 1136 1585" data-label="Image"> </div> <p>FIGURE 4-10 The lesion on this patient's forehead was diagnosed as a basal cell carcinoma (BCC), the most common and easily treatable type of skin cancer.</p>

black

4.57 *melan/o* is a combining form meaning _____, and melanocytes are the cells that give color to the skin.

melanoma

Combined with *-oma*, the term for a malignant tumor of the skin composed of melanocytes is _____ (Fig. 4-11).



Signs of melanoma

- A Asymmetry:** One half does not match the other half.
- B Border irregularity:** The edges are ragged, notched, or blurred.
- C Color:** The pigmentation is not uniform. Shades of tan, brown, and black are present. Red, white, and blue may add to the mottled appearance.
- D Diameter greater than 6 millimeters:** Any sudden or continuing increase in size should be of special concern.

FIGURE 4-11 Malignant melanoma. The characteristic ABCD warning signs are present in this photo of a nevus (mole) that has developed into a malignant melanoma.

bone

4.58 You'll recall that *oste/o* means _____. Linked to *-oma*, the term for a benign (noncancerous) tumor of the bone is _____. *sarc/o*, a combining form meaning _____, is used in terms indicating the presence of malignant connective tissue. Therefore, an osteosarcoma describes a malignant bone _____.

osteoma

flesh

tumor

muscle

4.59 *my/o* is a combining form meaning _____. A myoma is a muscle _____. *fibr/o* is the combining form used to describe _____. A fibromyoma is a benign tumor in the uterus composed of smooth muscle and fibrous connective tissue. (It is also called simply a fibroma.)

tumor

fiber

gland

4.60 *aden/o* is a combining form meaning _____.

cancer

Combined with *carcin/o*, meaning _____, and *-oma*,

tumor adenocarcinoma	meaning _____, the term describing a cancerous tumor of glandular (secretory) tissue is _____.
stop, stand beyond, after change	4.61 Cancerous tumors invade and destroy surrounding tissue and spread through blood and lymph to other parts of the body. Benign tumors do not. The term for the spread of cancer to distant organs or tissue is metastasis, a term formed by the link of <i>-stasis</i> , meaning _____ or _____, with <i>meta-</i> , a prefix meaning _____, _____, or _____.
tumor study of oncology	4.62 <i>onc/o</i> is the combining form meaning _____. Combined with <i>-logy</i> , the suffix meaning _____, the term describing the specialty concerned with the study of tumors and cancers is _____.



Rx for Success

Keeping watch on the pronunciation, spelling, and context in which a term is used will help you avoid errors in understanding those terms that sound similar but are spelled differently and have different meanings. Examples include:

- *hepatoma* (tumor of liver)
hematoma (tumor of blood)
- *aphagia* (inability to swallow)
aphasia (inability to speak)

SELF-INSTRUCTION: *-penia* (abnormal reduction)

Add the following combining form to your study of *-penia* before starting the Programmed Review.

COMBINING FORM	MEANING	FLASH CARD ID
erythr/o	red	CF-24

PROGRAMMED REVIEW: -penia (abnormal reduction)

ANSWERS	REVIEW
abnormal reduction white red erythrocytopenia	<p>4.63 <i>-penia</i> is a suffix meaning _____. This term component is often seen in terms describing symptoms related to an abnormal reduction of blood cells. For example, in leukocytopenia, the abnormal reduction is of _____ blood cells. (The more commonly used term is simply leukopenia.) Similarly formed, but using <i>erythr/o</i>, the combining form meaning _____, the term describing an abnormal reduction of red blood cells is _____. (This term is also more commonly known as erythropenia.)</p>
clot cell thrombocytopenia all	<p>4.64 The combination of <i>thromb/o</i>, a combining form meaning _____, with <i>cyt/o</i>, the combining form meaning _____, and the suffix <i>-penia</i> forms the term for the abnormal reduction of thrombocytes, the cells responsible for blood clotting: _____. Pancytopenia indicates an abnormal reduction of _____ cellular components in the blood.</p>
bone pertaining to	<p>4.65 Another use of <i>-penia</i> is in osteopenia, the term describing an abnormal reduction of _____. Osteopenic is the adjective form using the suffix <i>-ic</i>, meaning _____. Both terms relate to early warning signs of osteoporosis, a condition of decreased bone density and increased porosity, causing bones to become brittle and liable to break (fracture) (Fig. 4-12).</p>

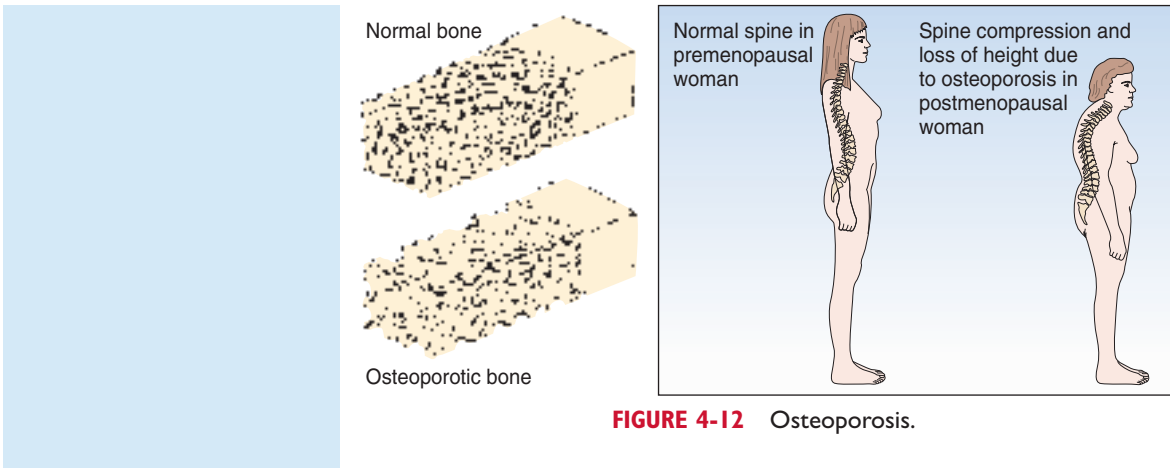


FIGURE 4-12 Osteoporosis.

SELF-INSTRUCTION: *-phobia* (condition of exaggerated fear or sensitivity)

Add the following combining form to your study of *-phobia* before starting the Programmed Review below.

COMBINING FORM	MEANING	FLASH CARD ID
phot/o	light	CF-49

PROGRAMMED REVIEW: *-phobia* (condition of exaggerated fear or sensitivity)

ANSWERS	REVIEW
exaggerated fear, sensitivity light photophobia	<p>6.66 Phobia is a stand-alone term, and <i>-phobia</i> is a suffix, both describing the condition of _____ or _____. When linked to <i>phot/o</i>, a combining form meaning _____, the term referring to a condition of exaggerated sensitivity to light is _____.</p>
condition of	<p>6.67 Phobia refers to the _____ exaggerated fear. As a suffix, it is used in many terms related to anxiety disorders (see Vital Statistics: Mental</p>

topmost
high
death
necrophobia

Illness). You'll recall that *acr/o* is a combining form meaning extremity or _____. A person with acrophobia has a fear of _____ places (heights). *necr/o*, a combining form meaning _____, is used to name the condition of an exaggerated fear of death: _____.

SELF-INSTRUCTION: *-pnea* (breathing)

Terms related to breathing are formed by a link of *-pnea* to a descriptive prefix. Add a review of the prefixes presented at the beginning of this chapter to your study of *-pnea* before starting the Programmed Review below.

PROGRAMMED REVIEW: *-pnea* (breathing)

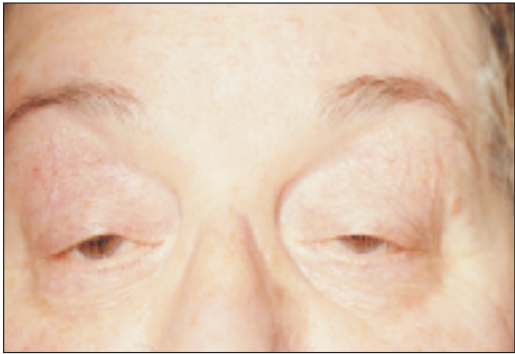
ANSWERS	REVIEW
breathing	<p>4.68 The symptomatic suffix indicating breathing is <i>-pnea</i>. The link of <i>-pnea</i>, meaning _____, to <i>eu-</i>, a prefix meaning good or _____, forms the term for normal breathing, or _____. <i>dys-</i> is a prefix meaning _____, _____, or _____. The term for difficult breathing is therefore _____. Apnea describes the inability to _____. <i>tachy-</i> is a prefix meaning _____. The term for fast breathing is _____. Bradypnea is a term indicating _____ breathing. In some conditions, such as during an asthma attack, the patient is unable to breathe except in an upright position. The term, derived from the combination of the prefix <i>ortho-</i>, meaning _____, _____, or _____, with <i>-pnea</i>, is _____. Orthopneic is the _____ used to describe orthopnea.</p>
normal	
eupnea	
painful, difficult, faulty	
dyspnea	
breathe	
fast	
tachypnea	
slow	
straight	
normal, correct	
orthopnea, adjective	

SELF-INSTRUCTION: -ptosis (falling or downward displacement)

Add the following combining form to your study of *-ptosis* before starting the Programmed Review below.

COMBINING FORM	MEANING	FLASH CARD ID
blephar/o	eyelid	CF-9

PROGRAMMED REVIEW: -ptosis (falling or downward displacement)

ANSWERS	REVIEW
downward displacement kidney nephroptosis stomach gastroptosis eyelid blepharoptosis eye	<p>4.69 Ptosis is used as a stand-alone term as well as a suffix, meaning falling or _____. The adjective form is ptotic. Using <i>nephr/o</i>, the combining form meaning _____, the term describing a downward displacement of a kidney is _____. Using <i>gastr/o</i>, the combining form meaning _____, the downward displacement of the stomach is termed _____. <i>blephar/o</i>, a combining form meaning _____, combined with <i>-ptosis</i> forms the specific term for drooping of the eyelid: _____. Most ophthalmologists, physicians who treat the _____, simply use the term ptosis (Fig. 4-13).</p>  <p>FIGURE 4-13 Blepharoptosis (ptosis). Marked bilateral blepharoptosis caused by paralysis.</p>



ON CLOSER INSPECTION *pt* in *-ptosis*

You'll remember from the rules of pronunciation covered in Chapter 1 that "pt" has a "t" sound, such as in ptosis (*tō'sis*); however, it is acceptable to pronounce both the "p" and the "t" when "pt" is found within a term, e.g., nephroptosis (*nef-rop-tō'sis*).

SELF-INSTRUCTION: *-plegia* (paralysis)

Terms related to paralysis are formed by a link of *-plegia* to a descriptive prefix. Add the following prefixes to your study of *-plegia* before starting the Programmed Review below.

PREFIX	MEANING	FLASH CARD ID
hemi-	half	P-18
para-	alongside of or abnormal	P-31
quadri-	four	P-27

PROGRAMMED REVIEW: *-plegia* (paralysis)

ANSWERS	REVIEW
suffix paralysis half hemiplegia prefix, four quadriplegia alongside of paraplegia	<p>4.70 <i>-plegia</i> is a/an _____ meaning _____ . It is combined in medical terms with prefixes that indicate the type of paralysis. Linked to <i>hemi-</i>, it forms the term for paralysis of _____ of the body (right or left): _____ . <i>quadri-</i> is the _____ meaning _____. Paralysis of all four limbs is therefore termed _____ . <i>para-</i>, the prefix meaning abnormal or _____ , is used to name paralysis of the lower extremities: _____ .</p>

SELF-INSTRUCTION: -rrhage and -rrhagia (to burst forth, usually blood)

Add the following combining form to your study of *-rrhage* and *-rrhagia* before starting the Programmed Review below.

COMBINING FORM	MEANING	FLASH CARD ID
men/o	month (menstruation)	

PROGRAMMED REVIEW: -rrhage and -rrhagia (to burst forth, usually blood)

ANSWERS	REVIEW
burst forth blood burst forth	<p>4.71 <i>-rrhage</i> and <i>-rrhagia</i> are suffixes meaning to _____, usually blood. In hemorrhage, the burst forth is specifically of _____. Menorrhagia indicates an excessive _____ of blood at the time of the month during female menstruation (a heavy period). <i>men/o</i> is a combining form referring to _____, and <i>metr/o</i> is a combining form referring to the _____. Combined with <i>-rrhagia</i>, it forms the term for bleeding from the uterus at any time other than menstruation (bleeding from the uterus between periods): _____.</p>
month	
uterus	
metrorrhagia	

SELF-INSTRUCTION: -rrhea (discharge)

Add the following combining forms to your study of *-rrhea* before starting the Programmed Review.

COMBINING FORM	MEANING	FLASH CARD ID
nas/o, rhin/o	nose	CF-43

PROGRAMMED REVIEW: -rrhea (discharge)

ANSWERS	REVIEW
discharge rhin/o rhinorrhea	<p>4.72 The Greek word rhoia, meaning flow, is the origin of <i>-rrhea</i>, the symptomatic suffix used to describe a/an _____ . Recall that there are two combining forms meaning nose: <i>nas/o</i> and _____. Using the second combining form, a runny discharge from the nose is called _____ .</p>
without amenorrhea painful difficult, faulty dysmenorrhea	<p>4.73 Menorrhoea describes menstrual discharge (menstruation). The addition of the prefix <i>a-</i>, meaning _____ , forms the term for the absence of menstrual discharge (a sign of pregnancy): _____. Using the prefix <i>dys-</i>, meaning _____ , _____ , or _____ , the term for painful menstrual discharge is _____ .</p>
ear otorrhea	<p>4.74 <i>ot/o</i> is the combining form for _____. The discharge (<i>-rrhea</i>) of purulent (infectious) matter from the ear as a result of infection is simply termed _____ .</p>
through discharge diarrhea	<p>4.75 Formed from the prefix <i>dia-</i>, meaning across or _____ , and the suffix <i>-rrhea</i>, meaning _____ , the term describing frequent loose or liquid stool is _____ .</p>
discharge	<p>4.76 In ancient times, the term for the purulent urethral discharge in males, now known as a characteristic of infection, was thought to be a leakage of semen. <i>gon/o</i>, meaning seed (as in sperm), was combined with <i>-rrhea</i>, meaning _____ , to form the term that today describes the contagious invasion of bacteria known as _____ .</p>

gonorrhea

_____ (a contagious, sexually transmitted inflammation of the genital mucous membranes caused by invasion of the gonococcus, *Neisseria gonorrhoea*).



Rx for Success

We have the Greeks to thank for the suffixes with **double rr's**. Take a careful look at these symptomatic and diagnostic ones so that you will spell them correctly in terms! Also, keep in mind that "rrh" has an "r" sound.

Don't be rolled over by the



Suffix	Meaning	Example
-rrhea	discharge	rhinorrhea (runny discharge from the nose)
-rrhage or -rrhagia	to burst forth (usually blood)	hemorrhage (a burst forth of blood) menorrhagia (a burst forth of blood during menstruation)

SELF-INSTRUCTION: -spasm (involuntary contraction)

Add the following combining form to your study of *-spasm* before starting the Programmed Review below.

COMBINING FORM	MEANING	FLASH CARD ID
enter/o	small intestine	CF-23

PROGRAMMED REVIEW: -spasm (involuntary contraction)

ANSWERS	REVIEW
suffix, involuntary	<p>4.77 The word spasm is used as a stand-alone term or at the end of a term as a symptomatic or diagnostic _____ that describes a/an _____</p>

contraction

involuntary

contraction, vessel

bronchus (airway)

bronchospasm

enter/o

enterospasm

involuntary contraction

eyelid

_____ . *-spasm* is used as a suffix in several terms. Using the combining form meaning vessel, vasospasm is defined as a/an _____ of a blood _____. Linked to *bronch/o*, meaning _____, the term for involuntary spasm of the bronchi is _____. The combining form referring to the small intestine is _____. The term for involuntary contraction of the small intestine is therefore _____. Using the combining form for eyelid, blepharospasm describes a/an _____ of the _____.

SELF-INSTRUCTION: *-ism* (condition of)

Add the following combining forms to your study of *-ism* before starting the Programmed Review below.

COMBINING FORM	MEANING	FLASH CARD ID
cerebr/o	largest part of the brain	CF-54
pulmon/o	lung	
thyroid/o	thyroid gland (shield)	

PROGRAMMED REVIEW: *-ism* (condition of)

ANSWERS	REVIEW
condition of	<p>4.78 The suffix <i>-ism</i>, meaning _____, is part of many diagnostic terms. <i>hyper-</i>, the prefix meaning above or _____, and its counterpart, <i>hypo-</i>, meaning below or _____, are used in terms for conditions of thyroid gland secretion. An excessive thyroid gland secretion is termed _____ thyroidism, whereas the condition of deficient thyroid secretion is _____ thyroidism.</p>
excessive	
deficient	
hyper	
hypo	

self, condition
of

4.79 Autism, a term formed by a link of *auto-*, the prefix meaning _____, with *-ism*, meaning _____, is the name for the developmental disability that renders the individual unable to communicate or relate to anything beyond one's self (see 🌐 Vital Statistics: Mental Illness).

clot

condition of
emboli
lung

brain

4.80 You'll recall that thrombus is the name for a stationary _____. Embolus is the name given a detached thrombus that travels within a blood vessel and obstructs where it lodges (Fig. 4-14). Embolism describes the _____ an embolus. The plural of embolus is _____. A pulmonary embolism (PE) is a clot that has lodged in a blood vessel in the _____. A cerebral embolism is a clot that has lodged in a blood vessel in the _____. The damage to brain tissue that occurs as a result of a cerebral embolism is known as a stroke or cerebrovascular accident (CVA) (Fig. 4-15).

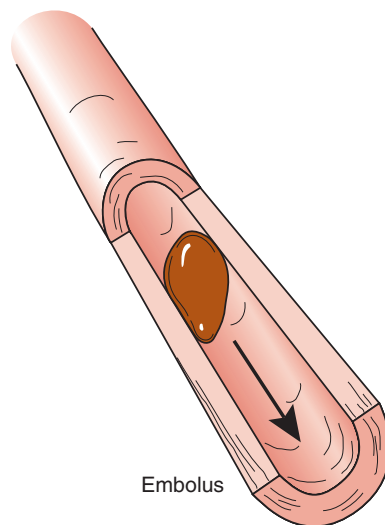


FIGURE 4-14 Embolism.

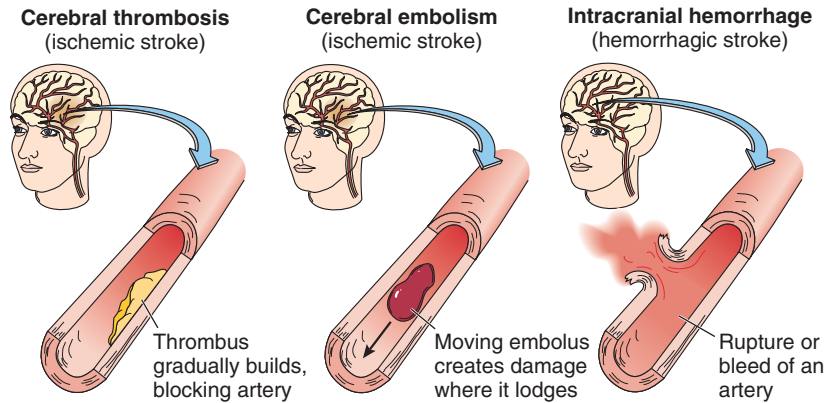


FIGURE 4-15 Types of stroke (cerebrovascular accident [CVA]).

aneurysm

4.81 In a few terms, the “i” in *-ism* is replaced with a “y” to show Greek origin. Paroxysm, the term referring to a condition marked by the sudden onset of symptoms, is an example. The combination of *aneury/o*, a combining form referring to a widening, with *-ysm*, forms _____, the Greek term that refers to a condition of widening in the wall of the heart, aorta, or artery caused by a congenital defect or acquired weakness (Fig. 4-16). The bleed or rupture of an aneurysm in a blood vessel in the brain causes an event known as a hemorrhagic stroke, which is another type of cerebrovascular accident (CVA).

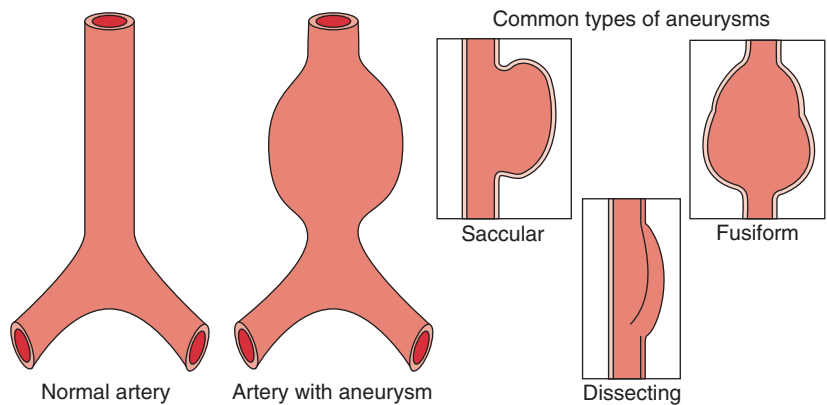


FIGURE 4-16 Common types of aneurysms.

SELF-INSTRUCTION: -y (condition or process of)

Add the following combining forms to your study of -y before starting the Programmed Review below.

COMBINING FORM	MEANING	FLASH CARD ID
lymph/o	clear fluid	
path/o	disease	CF-46
troph/o	nourishment or development	CF-65

PROGRAMMED REVIEW: -y (condition or process of)

ANSWERS	REVIEW
condition	<p>4.82 The suffix -y, meaning _____ or _____, is a common simple suffix that is seen in many symptomatic and diagnostic terms. You'll recall that the prefix <i>a-</i> means _____. Combined with <i>troph/o</i>, a combining form meaning nourishment or _____, and -y, the suffix meaning _____ or process, the term describing shrinking or wasting of tissue, such as muscle, is _____. On the other hand, hypertrophy is a term that indicates the above normal or _____ increase in size of an organ or tissue. The adjective form of atrophy is _____; the adjective form of hypertrophy is _____. Analyzing the term dystrophy, the prefix meaning _____, _____, or _____ gives a clue to the definition of the term as a/an _____ or _____ of faulty development of a tissue or organ. The adjective form of dystrophy is _____.</p>
process	
without	
development	
condition	
atrophy	
excessive	
atrophic	
hypertrophic	
painful	
difficult, faulty	
condition	
process	
dystrophic	

condition
process, heart

4.83 Cardiomyopathy is a term linking *-γ* to several components in order to describe a/an _____ or _____ of diseased _____ muscle.

fluid
gland, disease
condition or process

4.84 Lymphadenopathy, the term describing a condition of enlarged (diseased) lymph nodes, was formed by linking lymph, meaning clear _____, with *aden/o*, meaning _____, *path/o*, meaning _____, and *-γ*, meaning _____ or _____ (Fig. 4-17).



FIGURE 4-17 Enlarged lymph glands below the jaw (submandibular lymphadenopathy) in child with mumps (parotiditis).

SELF-INSTRUCTION: Common Terms Related to Disease

The following is a list of terms related to disease that commonly accompany symptomatic and diagnostic terms and are important to learn. Add the following to your study before starting the Programmed Review that follows.


TERM	MEANING
acute	sharp; a condition that has intense, often severe symptoms and a short course
benign	mild or noncancerous
chronic	a condition that develops slowly and persists over a period of time
degeneration	gradual deterioration of normal cells and body functions
degenerative disease	any disease in which deterioration of the structure or function of tissue occurs
diagnosis	determination of the presence of a disease based on an evaluation of symptoms, signs, and test findings (results) (<i>dia</i> = through; <i>gnosis</i> = knowing)
etiology	the cause of a disease (<i>etio</i> = cause)
exacerbation	an aggravation, or "flare-up," of symptoms (<i>ex</i> = out; <i>acerbo</i> = harsh)
febrile	relating to a fever, or elevated temperature
localized	limited to a definite area or part
malignant	harmful or cancerous
prognosis	foreknowledge; prediction of the likely outcome of a disease based on the general health status of the patient and knowledge of the usual course of the disease; often noted in one word (e.g., prognosis: good)
progressive	pertaining to the advance of a condition as the signs and symptoms increase in severity
remission	a period in which symptoms and signs stop or abate
sign	a mark; objective evidence of disease that can be seen or verified by an examiner
symptom	subjective evidence of disease that is perceived by the patient and often noted in his or her own words
syndrome	a running together; combination of symptoms and signs that give a distinct clinical picture indicating a particular condition or disease (e.g., menopausal syndrome)

PROGRAMMED REVIEW: Common Terms Related to Disease

ANSWERS	REVIEW
sign symptom objective febrile a pain or ache subjective symptom	<p>4.85 Originating from the Latin word for a mark, the term describing objective evidence of disease that can be seen or verified by an examiner is called a/an _____. The term used to describe subjective evidence of disease that is perceived by the patient is a/an _____. Many different signs and symptoms manifest disease in the body. For example, fever in the body can be verified by taking the patient's temperature, _____ evidence that may be a sign of disease. A patient is considered to be _____ if he or she has an increase in body temperature and to be ___febrile if he or she is without a fever. Cephalalgia, or head _____, is an example of _____ evidence that is a/an _____ of disease.</p>
across, through knowing diagnosis prognosis etiology	<p>4.86 The prefix <i>dia-</i> means _____ or _____, and <i>gnos/o</i> means _____. Through knowledge gained by education and training, a doctor makes a/an _____ when naming a disease and gives a/an _____ when predicting its likely outcome. The cause or _____ of a disease is often unknown.</p>
acute, chronic	<p>4.87 Some conditions have an intense, often severe or _____ onset, whereas others that are _____ develop slowly and persist over time.</p>
localized systemic	<p>4.88 Conditions limited to a definite body area or part are considered to be _____, whereas those that are _____ affect the whole body.</p>

malignant, benign	4.89 If a condition is cancerous, it is termed _____; if it is noncancerous, it is _____.
exacerbation remission	4.90 An aggravation, or “flare-up,” of symptoms is referred to as a/an _____. A condition is said to be in _____ during the period in which signs and symptoms have stopped.
not degeneration	4.91 Degenerative disease occurs as a result of gradual deterioration of tissue with loss of function. The prefix <i>de-</i> , meaning from, down, or _____, is used in the term for this process: _____.
progressive	4.92 A condition is considered to be _____ when the symptoms and signs advance with increased severity. The progression ranges from slow to rapid.
syndrome	4.93 The term describing a combination of symptoms and signs that give a distinct clinical picture is called a syndrome. For example, hot flashes, weight gain, mood swings, and irregular menstruation are signs and symptoms that indicate a woman is going through menopause, a condition known as menopausal _____.

Pronunciation Summary

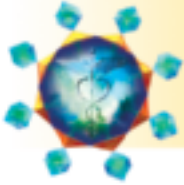
Following you will find a list of medical terms that you have learned to build and spell in this chapter, followed by the page number on which each term can be found and its written pronunciation.  Take a minute to listen to the audio pronunciations of these terms on the Student Resource CD-ROM, and then practice pronouncing them out loud. For additional practice and reinforcement, write the definition of each term on a separate piece of paper.

acromegaly/167*ak-rō-meg'ă-lē***acrophobia/181***ak-rō-fō'bē-ă***acute/192***ă-kyūt'***adenocarcinoma/177***ad'ĕ-nō-kar-si-nō'mă***amenorrhea/185***ă-men-ō-rē'ă***anemia/158***ă-nē'mē-ă***aneurysm/189***an'yū-rizm***aphagia/156***ă-fā'jē-ă***aphasia/155***ă-fā'zē-ă***apnea/181***ap'nē-ă***appendicitis/162***ă-pen-di-sī'tis***arteriosclerosis/170***ar-tēr'ē-ō-skler-ō'sis***arthralgia/150***ar-thral'jē-ă***atherosclerosis/170***ath'er-ō-skler-ō'sis***atrophy/190***at'rō-fē***autism/188***aw'tizm***benign/192***bē-nīn'***bipolar disorder/164***bī-pō'lār dis-ō'r'dĕr***blepharoptosis/182***blef'ă-rop'tō-sis***blepharospasm/187***blef'ă-rō-spazm***bradycardia/154***brad-ē-kar'dē-ă***bradypnea/181***brad-ip-nē'ă***bronchogenic/159***brong-kō-jen'ik***bronchospasm/187***brong'kō-spazm***carcinoma/176***kar-si-nō'mă***cardiomegaly/167***kar-dē-ō-meg'ă-lē***cardiomyopathy/191***kar'dē-ō-mī-op'ă-thē***cephalalgia/151***sef'al-al'jē-ă***cephalodynia/151***sef'a-lō-din'ē-ă***cerebrovascular accident (CVA)/188,189***ser'ĕ-brō-vas'kyū-lār ak'si-dent***cholelithiasis/174***kō'lē-li-thī'ă-sis***chondromalacia/163***kon'drō-mă-lā'shē-ă***chronic/192***kron'ik***coronary artery disease (CAD)/171***kōr'ō-nār-ē ar'tēr-ē di-zēz'***cystocele/153***sis'tō-sēl***degeneration/192***dē-jen-ēr-ă'shŭn***dermatitis/160***dĕr-mă-tī'tis***diagnosis/148***dī-ag-nō'sis***diarrhea/185***dī-ă-rē'ă***dysmenorrhea/185***dis-men-ō-rē'ă*

dysphagia/156*dis-fā'jē-ă***dysphasia/155***dis-fā'zē-ă***dysplasia/176***disp-nē'ă***dyspnea/181***disp-nē'ă***dysrhythmia/154***dis-rith'mē-ă***dysthymia/155***dis-thī'mē-ă***dystrophy/190***dis'trō-fē***endometriosis/170***en'dō-mē-trē-ō'sis***enterospasm/187***en'tēr-ō-spazm***epigastralgia/151***ep'i-gas-tral'jē-ă***epilepsy/175***ep'i-lep'sē***erythrocytopenia/179***ĕ-rith'rō-sī'tō-pē'nē-ă***etiology/192***ē-tē-ol'ō-jē***eupnea/181***yūp-nē'ă***exacerbation/192***ek-zas-ĕr-bā'shŭn***febrile/192***feb'ril***fibroma/177***fī-brō'mă***fibromyoma/177***fī'brō-mī-ō'mă***gastroptosis/182***gas'trōp-tō'sis***hemiplegia/183***hem-ē-plē'jē-ă***hemorrhage/186***hem'ō-răj***hepatitis/162***hep-ă-tī'tis***hepatomegaly/167***hep'ă-tō-meg'ă-lē***hydrocele/152***hī'drō-sēl***hyperglycemia/158***hī'pĕr-gli-sē'mē-ă***hyperlipemia/157***hī'pĕr-li-pē'mē-ă***hyperthyroidism/187***hī-pĕr-thī'royd-izm***hypertrophy/190***hī-pĕr'trō-fē***hypoglycemia/158***hī'pō-gli-sē'mē-ă***hypothyroidism/187***hī'pō-thī'royd-izm***hypoxemia/158***hī-pok-sē'mē-ă***iatrogenic/159***ī-at'rō-jen'ik***ischemia/159***is-kē'mē-ă***ischemic/159***is-kē'mik***kyphosis/168***kī-fō'sis***laryngomalacia/163***lă-ring'gō-mă-lă'shē-ă***leukemia/158***lū-kē'mē-ă***leukocytosis/170***lū'kō-sī-tō'sis***leukocytopenia/179***lū'kō-sī'tō-pē'nē-ă***leukopenia/179***lū'kō-pē'nē-ă*

lithiasis/174*lith-ī'ă-sis***localized/192***lō9kăl-ı-zd***lordosis/168***lōr-dō'sis***lymphadenopathy/191***lim-fad'ē-nop'ă-thē***macrocytosis/170***mak'rō-sī-tō'sis***malignant/192***mă-līg'nănt***mania/164***mă'nē-ă***manic depression/164***man'ik dē-presh'ŭn***melanoma/177***mel'ă-nō'mă***menorrhagia/184***men-ō-ră'jē-ă***metastasis/178***mě-tas'tă-sis***metrorrhagia/184***mē-trō-ră'jē-ă***microcytosis/170***mī'krō-sī-tō'sis***microlithiasis/174***mī'krō-li-thī'ă-sis***myalgia/151***mī-al'jē-ă***myocardial infarction (MI)/173***mī-ō-kar'dē-ăl in-fark'shŭn***myodynia/151***mī'ō-din'ē-ă***myoma/177***mī-ō'mă***narcolepsy/175***nar'kō-lep-sē***necromania/164***nek'rō-mă'nē-ă***necrophobia/181***nek'rō-fō'bē-ă***necrosis/172***ně-krō'sis***neoplasia/176***nē'ō-plă'zē-ă***nephrolithiasis/174***nef'rō-li-thī'ă-sis***nephroptosis/182***nef'rop-tō'sis***nephrosis/170***ne-frō'sis***neurosis/169***nū-rō'sis***oncology/178***ong-kol'ō-jē***orthopnea/181***ōr-thop-nē'ă***ostealgia/150***os-tē-al'jē-ă***osteoarthritis/161***os'tē-ō-ar-thī'tis***osteodynia/150***os-tē-ō-din'ē-ă***osteomalacia/163***os'tē-ō-mă-lă'shē-ă***osteopenia/179***os'tē-ō-pē'nē-ă***osteosarcoma/177***os'tē-ō-sar-kō'mă***otalgia/151***ō-tal'jē-ă***otitis media/161***ō-tī'tis mē'dē-ă***otodynia/151***ō-tō-din'ē-ă***otorrhea/185***ō-tō-rē'ă***paraplegia/183***par-ă-plē'jē-ă*

pharyngitis/161*fă-rin-jī'tis***phlebitis/162***fle-bī'tis***photophobia/180***fō-tō-fō'bē-ă***pneumonia/155***nū-mō'nē-ă***pneumonitis/161***nū-mō-nī'tis***polydipsia/156***pol-ē-dip'sē-ă***polyuria/156***pol-ē-yū'rē-ă***prognosis/192***prog-nō'sis***progressive/192***prō-gres'iv***psychosis/169***sī-kō'sis***quadriplegia/183***kwah'dri-plē'jē-ă***rectocele/153***rek'tō-sēl***rhinitis/161***rī-nī'tis***rhinorrhea/185***rī-nō-rē'ă***remission/192***rē-mish'ŭn***salpingitis/162***sal-pin-jī'tis***schizophrenia/155***skiz-ō-frē'nē-ă***sclerosis/170***sklē-rō'sis***scoliosis/168***skō-lē-ō'sis***sign/192***sīn***splenomegaly/167***splē-nō-meg'ă-lē***spondylosis/170***spon-di-lō'sis***stenosis/171***ste-nō'sis***symptom/148, 192***simp'tōm***syndrome/192***sin'drōm***tachycardia/154***tak-i-kar'dē-ă***tachypnea/181***tak-ip-nē'ă***thrombocytopenia/179***throm'bō-sī-tō-pē'nē-ă***thrombophlebitis/162***throm'bō-fle-bī'tis***tonsillitis/161***ton-si-lī'tis***tracheomalacia/163***trā'kē-ō-mă-lă'shē-ă***vaginitis/162***vaj-i-nī'tis***varicocele/152***var'i-kō-sēl***vasospasm/187***vā'sō-spazm*



Examine Your Understanding

For the following terms, draw a line or lines to separate the prefixes (P), combining forms (CF), roots (R), and suffixes (S). Then, write the meaning of each component on the corresponding blank to define the term.

EXAMPLE

hyperlipemia
hyper/lip/emia
above or excessive / fat / blood condition
P R S

1. anemia

_____ / _____
P S

2. arthralgia

_____ / _____
R S

3. hydrocele

_____ / _____
CF S

4. erythrocytopenia

_____ / _____ / _____
CF CF S

5. hepatitis

_____ / _____
R S

6. endometriosis

_____ / _____ / _____
P R S

7. dysplasia

_____ / _____ / _____
P R S

8. melanoma

_____ / _____
R S

9. orthopnea

_____ / _____
P S

10. thrombophlebitis

_____ / _____ / _____
 CF R S

11. schizophrenia

_____ / _____ / _____
 CF R S

12. iatrogenic

_____ / _____
 CF S

13. chondromalacia

_____ / _____
 CF S

14. bronchospasm

_____ / _____
 CF S

15. metastasis

_____ / _____
 P S

16. gastralgia

_____ / _____
 R S

17. splenomegaly

_____ / _____
 CF S

18. lymphadenopathy

_____ / _____ / _____ / _____
 R CF R S

19. cephalodynia

_____ / _____
 R S

20. osteosarcoma

_____ / _____ / _____
 CF R S

21. hyperthyroidism

_____ / _____ / _____
 P R S

22. oncology

_____ / _____
 CF S

23. blepharoptosis

_____ / _____
CF S

24. adenocarcinoma

_____ / _____ / _____
CF R S

25. varicocele

_____ / _____
CF S

26. amenorrhea

_____ / _____ / _____
P CF S

27. atrophic

_____ / _____ / _____
P R S

28. cystocele

_____ / _____
CF S

29. bradypnea

_____ / _____
P S

30. hypothyroidism

_____ / _____ / _____
P R S

Match the following conditions.

31. ____ bradycardia

32. ____ aphasia

33. ____ nephrosis

34. ____ tachycardia

35. ____ kyphosis

36. ____ atrophy

37. ____ hypertrophy

38. ____ dysphasia

39. ____ dystrophy

40. ____ lordosis

41. ____ necrosis

a. diseased muscle

b. loss of blood flow

c. difficulty swallowing

d. sway back

e. difficult speech

f. excessive development

g. deficient thyroid

h. dead tissue

i. humpback

j. without development

k. inability to speak

- | | |
|--------------------------|------------------------|
| 42. _____ dysphagia | l. slow heart |
| 43. _____ myopathy | m. degenerative kidney |
| 44. _____ hypothyroidism | n. fast heart |
| 45. _____ ischemia | o. faulty development |

Circle the correct meaning for the following term components.

- | | | | | |
|---------------------|-----------------|----------------------------|------------------|-------------------------|
| 46. <i>-malacia</i> | a. discharge | b. enlargement | c. hernia | d. softening |
| 47. <i>-ia</i> | a. condition of | b. increase | c. pertaining to | d. abnormal reduction |
| 48. <i>-cele</i> | a. enlargement | b. involuntary contraction | c. hernia | d. stop or stand |
| 49. <i>-rrhea</i> | a. discharge | b. blood condition | c. tumor | d. to burst forth blood |
| 50. <i>-ic</i> | a. condition of | b. increase | c. tumor | d. pertaining to |
| 51. <i>-odynia</i> | a. resembling | b. pain | c. pouching | d. abnormal reduction |
| 52. <i>-ptosis</i> | a. falling down | b. involuntary contraction | c. tumor | d. discharge |
| 53. <i>-itis</i> | a. hard | b. straight | c. inflammation | d. left |
| 54. <i>-osis</i> | a. discharge | b. condition | c. tumor | d. pertaining to |

Identify the synonym for the following term components.

55. *nas/o* _____
56. *-odynia* _____
57. *vertebr/o* _____
58. *ven/o* _____

Give the medical term for the following conditions.

59. inflammation of the ear _____
60. inflammation of the nose _____
61. inflammation of the throat _____
62. inflammation of a joint _____
63. enlargement of the liver _____
64. discharge from the nose _____
65. painful menstrual discharge _____
66. downward displacement of the eyelid _____
67. downward displacement of the kidney _____
68. pain in the joint _____
69. pain in the head _____
70. pain in the stomach _____
71. bleeding from the uterus _____
72. bleeding from the ear _____
73. presence or formation of stone or stones _____

Match the features of the following psychiatric terms.

- | | |
|----------------------|--|
| 74. _____ acrophobia | a. anxiety |
| 75. _____ necromania | b. distorted reality |
| 76. _____ mania | c. mild depression |
| 77. _____ psychosis | d. abnormal elation and increased activity |
| 78. _____ neurosis | e. only relates to one's self |
| 79. _____ dysthymia | f. abnormal impulse toward death |
| 80. _____ autism | g. fear of heights |

Identify the meaning of the following suffixes.

81. *-malacia* _____
82. *-spasm* _____
83. *-lepsy* _____
84. *-iasis* _____
85. *-tic* _____

Match the following terms with their meanings.

- | | |
|------------------------|--|
| 86. _____ febrile | a. period in which symptoms stop |
| 87. _____ syndrome | b. probable outcome of a disease |
| 88. _____ chronic | c. name of a disease based on history, exam, and testing |
| 89. _____ remission | d. elevated temperature |
| 90. _____ etiology | e. set of symptoms characteristic of a particular disease or condition |
| 91. _____ malignant | f. an aggravation of symptoms |
| 92. _____ prognosis | g. developing slowly over time |
| 93. _____ diagnosis | h. limited to a definite area or part |
| 94. _____ exacerbation | i. cancerous |
| 95. _____ localized | j. the study of the cause of a disease |
| 96. _____ acute | k. objective evidence of disease |
| 97. _____ benign | l. subjective evidence of disease |
| 98. _____ degenerative | m. mild or noncancerous |
| 99. _____ symptom | n. deterioration of the structure or function of tissue |
| 100. _____ sign | o. having intense, often severe symptoms |

MEDICAL RECORD EXERCISES



Medical Record 4-1

You first read about Jane Dano in the Meet the Patient vignette at the beginning of the chapter. She was referred by Dr. Spaulding to an endocrinologist, who decided to admit her to Central Medical Center. One week later, she was discharged, and her Discharge Summary is shown in Medical Record 4-1 (page 206). Review the medical record and answer the following questions.

Questions about Medical Record 4-1

- Below are medical terms used in this record that you have not yet encountered in the text. Underline each term where it appears in the record and, using a medical dictionary, define them below.

nocturia _____


urinalysis _____

ketones _____

dietitian _____

human insulin _____

NPH insulin _____

 Use an online resource to define and learn about the following:

USDA Dietary Guidelines _____

- What was significant in Jane's history?
 - she had lost weight
 - she was excessively thirsty
 - she needed to urinate frequently
 - all of the above
- Which of the following describes Jane's condition?
 - metabolic disorder caused by absence or insufficient production of insulin
 - condition of hypersecretion of the thyroid gland
 - condition of hyposecretion of the thyroid gland
 - condition resulting in an excessive amount of insulin in the bloodstream
- During Jane's hospital course, what was the condition that required "spot dosing" at lunch?
 - low blood sugar
 - high blood sugar
 - glucose in her urine
 - presence of ketones

CENTRAL MEDICAL CENTER

211 Medical Center Drive • Central City, US 90000-1234 • PHONE: (012) 125-6784 • FAX: (012) 125-9999

DISCHARGE SUMMARY

ADMITTING DIAGNOSIS: New onset Type 1 diabetes mellitus.

FINAL DIAGNOSIS: New onset Type 1 diabetes mellitus.

HISTORY OF PRESENT ILLNESS: The patient is an 11-year-old white female who presented with a 3-week history of polyuria and polydipsia. She has also had nocturia for the past 2 months and associated weight loss. She was seen by J. Spaulding, M.D., her private physician, on the day of admission. A urinalysis was positive for glucose. The patient was then referred to this examiner for further evaluation and management of new onset Type 1 diabetes mellitus.

HOSPITAL COURSE: The patient was admitted to the third floor. She was initially treated with regular insulin and then progressed to a 2-shot regimen with regular insulin and NPH before breakfast and regular insulin and NPH before dinner. She also required some spot dosing at lunch for hyperglycemia. Prior to discharge, her blood sugars had stabilized. She did not have any overnight hypoglycemia. Her ketones were clear, and she had spilled 10 gm of glucose in her urine. Also, during the course of hospitalization, the parents and the patient underwent extensive education with nursing staff and the dietitian including how to give insulin injections and do home blood glucose monitoring.

DISCHARGE PROGRAM: The patient is to be seen in the Diabetic Clinic in approximately 2 weeks. **DIET:** She is on a 2000-calorie diet based on USDA Dietary Guidelines with three meals and two snacks. Physical activity is ad lib. The patient may return to school at the end of the week. **SPECIAL INSTRUCTIONS:** The parents are to check blood sugar at 2 a.m. for the first two nights at home. They are also to call for insulin dose adjustments daily for the first week after discharge.

DISCHARGE MEDICATIONS: Novolin Human Insulin, 12 units of regular and 12 units of NPH, to be given 20 minutes before breakfast; 10 units of regular and 6 units of NPH to be given 20 minutes before dinner.

R Gallegos M.D.

R. Gallegos, M.D.

RG:ti
D:11/19/20xx
T:11/20/20xx

DISCHARGE SUMMARY

PT. NAME: DANO, JANE
ID NO: IP-403831
ROOM NO: 310
ADM. DATE: November 11, 20xx
DIS. DATE: November 18, 20xx
ATT. PHYS: R. GALLEGOS, M.D.

5. What was noted in the discharge instructions about Jane's physical activity?
 - a. She should only be as active as necessary.
 - b. She may be as active as she desires.
 - c. She is limited to bedrest.
 - d. She must exercise 20 minutes before breakfast.
6. Which test will Jane and her family be performing at home?
 - a. vital signs
 - b. body weight
 - c. insulin injections
 - d. blood sugar monitoring

Medical Record 4-2

S 45 y.o. ♂ with long history of asthma presents with SOB and severe wheezing. The pt has felt poorly for the past 3 days but significantly worse in the last hour. The pt is orthopneic and has had a nonproductive cough for the last few days but denies fever or chills.

PMH: Singulair, 10 mg tab po q noc, Proventil inhaler qid prn. NKDA


O VS: T 98°F, P 128, R 36, BP 180/90

Pertinent PE Findings: Skin – diaphoretic. Chest – bilateral expiratory wheezes. Heart – rapid rate & murmur. The electrocardiogram (ECG) demonstrates sinus tachycardia

A Asthma exacerbation
R/O myocardial infarction

P Admit to ICU for treatment and cardiac assessment

Questions about Medical Record 4-2

1.  Below are medical terms used in this record that you have not yet encountered in the text. Underline each term where it appears in the record and, using a medical dictionary, define them below.

asthma _____

diaphoretic _____

expiratory _____

wheezes _____

(sinus) tachycardia _____

2. What is the sex of this patient?
 - a. male
 - b. female
3. How often may the patient inhale the Proventil?
 - a. as desired
 - b. twice a day
 - c. three times a day
 - d. four times a day
4. How is the Singulair taken?
 - a. one tablet by mouth every night
 - b. 10 milligrams inhaled once a day
 - c. one tablet by mouth at bedtime if needed
 - d. one tablet every other night
5. What is noted about the patient's skin?
 - a. it is dry
 - b. it is cold
 - c. it is sweaty
 - d. it is itching
6. What did the electrocardiogram (ECG) of the heart reveal?
 - a. high blood pressure
 - b. wheezes
 - c. rapid contractions of the heart
 - d. a heart murmur
7. Why is the patient being admitted to the hospital?
 - a. to treat the asthma and the heart attack
 - b. to treat the asthma and find out if the patient has had a heart attack
 - c. to treat the asthma, tachycardia, and heart attack
 - d. to treat the asthma and heart murmur
8. What is noted about the patient's breathing?
 - a. normal
 - b. slow
 - c. shallow
 - d. only able to breathe in an upright position
9. What does "exacerbation" refer to in this record?
 - a. a period in which symptoms and signs stop
 - b. gradual deterioration of normal cells and body functions
 - c. a condition that develops slowly and persists over a period of time
 - d. an aggravation of symptoms

Answers to Examine Your Understanding

1. an/emia
without / blood condition
P S
2. arthr/algia
joint / pain
R S
3. hydro/cele
water / pouching or hernia
CF S
4. erythro/cyto/penia
red / cell / abnormal reduction
CF CF S
5. hepat/itis
liver / inflammation
R S
6. endo/metri/osis
within / uterus / condition or increase
P R S
7. dys/plas/ia
painful, difficult, or faulty / formation / condition of
P R S
8. melan/oma
black / tumor
R S
9. ortho/pnea
straight, normal, or correct / breathing
P S
10. thrombo/phleb/itis
clot / vein / inflammation
CF R S
11. schizo/phren/ia
split / mind (or diaphragm) / condition of
CF R S
12. iatro/genic
treatment / pertaining to origin
CF S
13. chondro/malacia
cartilage / softening
CF S
14. broncho/spasm
bronchus (airway) / involuntary contraction
CF S
15. meta/stasis
beyond, after, or change / stop or stand
P S

16. gastr/algia
stomach / pain
R S
17. spleno/megaly
spleen / enlargement
CF S
18. lymph/adenopath/y
clear fluid / gland / disease / condition or process of
R CF R S
19. cephal/odynia
head / pain
R S
20. osteo/sarc/oma
bone / flesh / tumor
CF R S
21. hyper/thyroid/ism
above or excessive / thyroid gland (shield) / condition of
P R S
22. onco/logy
tumor / study of
CF S
23. blepharo/ptosis
eyelid / falling or downward displacement
CF S
24. adeno/carcin/oma
gland / cancer / tumor
CF R S
25. varico/cele
swollen, twisted vein / pouching or hernia
CF S
26. a/meno/rrhea
without / month (menstruation) / discharge
P CF S
27. a/troph/ic
without / nourishment or development / pertaining to
P R S
28. cysto/cele
bladder or sac / pouching or hernia
CF S
29. brady/pnea
slow / breathing
P S
30. hypo/thyroid/ism
below or deficient / thyroid gland (shield) / condition of
P R S

- | | | |
|------------|---------------------------------|------------------------------|
| 31. l | 56. -algia | 78. a |
| 32. k | 57. spondyl/o | 79. c |
| 33. m | 58. phleb/o | 80. e |
| 34. n | 59. otitis | 81. softening |
| 35. i | 60. rhinitis | 82. involuntary contraction |
| 36. j | 61. pharyngitis | 83. seizure |
| 37. f | 62. arthritis | 84. formation or presence of |
| 38. e | 63. hepatomegaly | 85. pertaining to |
| 39. o | 64. rhinorrhea | 86. d |
| 40. d | 65. dysmenorrhea | 87. e |
| 41. h | 66. blepharoptosis | 88. g |
| 42. c | 67. nephroptosis | 89. a |
| 43. a | 68. arthralgia or arthrodynia | 90. j |
| 44. g | 69. cephalalgia or cephalodynia | 91. i |
| 45. b | 70. gastralgia or gastrodynia | 92. b |
| 46. d | 71. metrorrhagia | 93. c |
| 47. a | 72. otorrhagia | 94. f |
| 48. c | 73. lithiasis | 95. h |
| 49. a | 74. g | 96. o |
| 50. d | 75. f | 97. m |
| 51. b | 76. d | 98. n |
| 52. a | 77. b | 99. l |
| 53. c | | 100. k |
| 54. b | | |
| 55. rhin/o | | |

ANSWERS TO MEDICAL RECORD EXERCISE 4-1

1. See medical dictionary/resources.
2. d
3. a
4. b
5. b
6. d

ANSWERS TO MEDICAL RECORD EXERCISE 4-2

1. See medical dictionary.
2. a
3. d
4. a
5. c
6. c
7. b
8. d
9. d

