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# quick medical terminology

## A SELF-TEACHING GUIDE

- Expand your working medical vocabulary with the latest terms
- Master the most up-to-date techniques for learning new words
  - Learn all the essential Greek and Latin building blocks

SHIRLEY SOLTESZ STEINER, M.S., R.N., AND NATALIE PATE CAPPS, M.N.Sc., R.N.

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# **Quick Medical Terminology**

**A Self-Teaching Guide**

**5th Edition**

**Shirley Soltesz Steiner, R.N., M.S.**

**Natalie Pate Capps, M.N.Sc., R.N.**



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*For*

*Dorothy Elizabeth Wilson Soltesz, who is my mom and best friend.*

*Mildred Hall, who is my godmother and may not know how much she influenced my growing-up years. Mildred assured me I had what it takes to go to college, get an education, and create a better life.*

—S. S.

*For*

*My perfect mate, Barry, and remarkable children, Harden, Pate, and Jacqueline Capps*

*My parents and sisters, who shaped me:  
Susie Ashworth, Nick Pate, Amy Bean, and Molly Pate*

*With affection, gratitude, and adoration for you all.*

—N. C.

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# To the Reader

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## What This Book Is and Who It's For

So you want to learn the language of medicine. Great! Everything you need for learning medical terminology is right in your hands. The language of medicine is precise and technically oriented. It is among the great tools of the mind for better understanding and more accurate communication between all practitioners of the life sciences. Learning this special language is your opportunity to be among them. *Quick Medical Terminology* can prepare you for a new job or even a new career in one of the nation's fastest growing job markets, health care and allied health services.

In *Quick Medical Terminology* you'll learn to pronounce, spell, and define medical terms used in today's health care settings. You will use a word-building strategy that helps you discover connections and relationships among word roots, prefixes, and suffixes. You'll learn the meaning of each part of a complex medical term and be able to put the parts together and define the term. Very quickly you'll develop a large repertoire of useful medical terms, much greater than the 500-plus terms presented in this text.

Beginning with Chapter 4, most of the medical terms in each chapter will focus on a particular part of the body. Grouping related terms in this way will help you learn them better. However, the order of the chapters should not be confused with the order of a standard head-to-toe medical evaluation. At the end of the book, there is a Review by Body System Assessment that will walk you through the standard head-to-toe examination medical professionals typically follow. This review will bring together the medical terminology you will learn in the rest of the book.

*Quick Medical Terminology* is an enjoyable way to learn the very special language of medicine by yourself, at your own pace. If you speak and understand English and have a high school education or equivalent, you'll quickly learn the basics and much more.

---

## How to Use This Program

We suggest you use the following steps to approach your learning.

**Step 1. Pre- and Post-Testing**

If it's worth learning, isn't it worth knowing you have succeeded? You will find two Final Self-Tests in the back of your guide. We suggest you take one test before you begin your study and take another after you have completed all your lessons. Pre- and post-testing shows you how much you have learned. Either one of the final tests may be used first.

**Step 2. Self-Instructional Chapter**

This self-teaching guide lets you proceed at a pace that is right for you. It provides everything you need to complete each of the eleven instructional chapters, which include:

**Introduction and Mini-Glossary.** The first page of each chapter introduces you to what you will cover and provides a Mini-Glossary of the terms and word parts you'll be learning. You may want to refer to it as you proceed through the lesson.

**Numbered frames.** Numbered frames are the building blocks of each chapter. A frame presents a small amount of information and expects you to read and think about that information. Then it asks you to respond to it.

The way you respond may be:

- to select a medical term or definition from a list of suggested answers.
- to write a medical term for a given definition.
- to draw a conclusion and write it in your own words.

**Example**

*Emesis* is a term that means vomiting. A term that means excessive vomiting is *hyperemesis*. Underline the part of the medical term meaning excessive.

A gallbladder attack can cause excessive vomiting. Write the term that describes this unpleasant condition. \_\_\_\_\_

**Example**

*Myelo / dysplasia* means defective development of the spinal cord.

*Chondro* means cartilage. What does *chondro / dysplasia* mean? \_\_\_\_\_

**Answers.** As you work through the chapter, you'll find the correct answers on the left-hand side of the page. It's a good idea to use a folded piece of paper to cover the answer until you give your own. Your answer will be correct most of the time, but when your answer doesn't match ours, be sure you know why it doesn't. You may need to go back and review a few frames before continuing.

**Pronunciation Guide.** When you work with a medical term for the first time, the answer column guides your pronunciation of the new term. Take the opportunity

to practice pronouncing each new term correctly several times. Say it aloud or subverbally (saying it to yourself).

### Example

chondrodysplasia (kon'dro dis pla'zhe)

**Review Exercises.** Some chapters are longer than others, so to help you plan your breaks, we designed several short learning sequences into each chapter. A brief Review Exercise occurs at the end of a learning sequence. If you need a break, stop after a Review Exercise. Proceed at a pace that is right for you. We urge you to complete an entire chapter before calling it a day.

**Summary Exercise.** Each of the eleven instructional chapters ends with a Summary Exercise. This final exercise pulls together all the new terms you worked with in the chapter. Using the pronunciation guide alongside each term in the list, take the opportunity to practice pronouncing each term correctly and defining it aloud or subverbally. It really works! You might ask a friend to pronounce each term in the list so you can practice spelling it when you hear it.

[This is a good classroom exercise for instructor-guided spelling practice, pronunciation practice, and defining the terms.]

**Chapter Self-Test.** Each chapter ends with a Self-Test in two parts. Part 1 asks you to match a list of definitions with the correct medical terms. Part 2 asks you to construct the correct medical term for each definition listed. All terms and definitions are covered in the instructional chapter you have just completed. Here's another opportunity to see how you're doing.

### **Step 3. Chapter Review Sheet**

Beginning on page 261, you'll find a two-part Review Sheet for each of the eleven chapters of instruction that make up this self-teaching program. We suggest you begin every new chapter (beginning with Chapter 2) by completing a Review Sheet for the previous chapter. These exercises are an important part of the learning program and will help you recall and practice the terms and definitions of the preceding chapter before you begin the next one.

*Part 1:* Given a term, or word part, write the meaning.

*Part 2:* Given the definition of a term, write the correct term.

Correct answers are provided.

You may use these Review Sheets anytime, and as often as you wish. We suggest you make several photocopies of each Review Sheet and use them at any time to practice what you've already covered. There is never enough practice.

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# Objectives of the Program

When you have finished *Quick Medical Terminology*, you will have formed well over 500 medical terms using our word-building strategy combining prefixes, suffixes, and word roots to create complex medical terms.

1. You will learn to understand medical terms by breaking them into their component parts and learning the meaning of the parts.
2. You will learn to construct medical terms from component parts to express given definitions.
3. You will learn to pronounce, spell, and define medical terms used in this book.
4. You will be able to apply this word-building strategy to terms covered in this book and other terms you will come across as you work in a health care setting.

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# Pronunciation Key

The primary stress mark (ˈ) is placed after the syllable bearing the heavier stress or accent; the secondary stress mark (ˌ) follows a syllable having a somewhat lighter stress, as in *com·men·da·tion* (komˈ ənˌdāˈ shən).

a	add, map	m	move, seem	u	up, done
ā	ace, rate	n	nice, tin	er	urn, term
air	care, air	ng	ring, song	yōō	use, few
ä	palm, father	o	odd, hot	v	vain, eve
b	bat, rub	ō	open, so	w	win, away
ch	check, catch	ô	order, jaw	y	yet, yearn
d	dog, rod	oi	oil, boy	z	zest, muse
e	end, pet	ou	out, now	zh	vision, pleasure
ē	even, tree	ōō	pool, food	ə	the schwa, an unstressed vowel representing the sound spelled
f	fit, half	oo	took, full		<i>a</i> in <i>above</i>
g	go, log	p	pit, stop		<i>e</i> in <i>sicken</i>
h	hope, hate	r	run, poor		<i>i</i> in <i>clarity</i>
i	it, give	s	see, pass		<i>o</i> in <i>melon</i>
ī	ice, write	sh	sure, rush		<i>u</i> in <i>focus</i>
j	joy, ledge	t	talk, sit		
k	cool, take	th	thin, both		
l	look, rule	th	this, bathe		

Source: Slightly modified “Pronunciation Key” in *Funk & Wagnalls Standard College Dictionary*. Copyright © 1977 by Harper & Row, Publishers, Inc. Reprinted by permission of the publisher.

The schwa (ə) varies widely in quality from a sound close to the (u) in *up* to a sound close to the (i) in *it* as heard in pronunciations of such words as *ballot*, *custom*, *landed*, *horses*.

The (r) in final position as in *star* (stär) and before a consonant as in *heart* (härt) is regularly indicated in the respellings, but pronunciations without (r) are unquestionably reputable. Standard British is much like the speech of Eastern New England and the Lower South in this feature.

In a few words, such as *button* (butˈn) and *sudden* (sudˈn), no vowel appears in the unstressed syllable because the (n) constitutes the whole syllable.

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# The Word-Building Strategy

*Quick Medical Terminology* teaches you a strategy for word-building. The vocabulary of medicine is large and complex, but you can learn much of it by breaking down a complex term into its meaningful parts and putting together a word from those meaningful parts. Cover the column on the left and check your answers when you are done. Let's begin.

1.

All words have a word root. The *root* is the base or the foundation of the word, regardless of what other word, unit, or syllable may be attached to it.

For example: *do* is the root of *undo* and *doing*.

What is the root of import, export, transport, and support?

port

2.

In this example, the words suffix, prefix, affix, and fixation have *fix* as their \_\_\_\_\_.

root

3.

What is the root in tonsill/itis, tonsill/ectomy, and tonsill/ar?

tonsil

4.

Two or more words may be combined to form a meaningful compound word. Using two or more of the following words, create some meaningful compound words:

Some suggestions:

overhang  
overcome  
understand  
grandstand  
outcome,  
etc.

over	stand
hang	wear
under	come
grand	out

---

---

---

yes  
Two words are combined to make a meaningful compound term.

5.  
Is teaspoon a compound word? \_\_\_\_\_  
Explain your answer.  
\_\_\_\_\_  
\_\_\_\_\_

micr  
tel  
micr/o  
tel/e

6.  
A word root and a whole word may form a compound word. But the root must be in its *combining form*. The root plus a vowel (a, e, i, o, u) make the combining form. Here are two compound terms, micr/o/scope and tel/e/cast.  
What are the word roots? \_\_\_\_\_  
What are the combining forms? \_\_\_\_\_

phon/o/graph  
gastr/o/enteric  
laryng/o/spasm

7.  
Underline the combining form in each of the following words:  
phon/o/graph            gastr/o/enter/ic  
laryng/o/spasm

a word root plus a vowel (a, e, i, o, u)

8.  
The combining form in compound words is made up of a \_\_\_\_\_ plus a \_\_\_\_\_.

a combining form

9.  
In tel/e/graph and tel/e/phone the root plus a vowel are necessary to make these compound words. What is this special form called?  
\_\_\_\_\_

all three

10.  
Compound terms may be composed of which of the following?  
a) two or more whole words  
b) a whole word and a word root  
c) a word root combining form and a word  
Your answer? \_\_\_\_\_

combining form

11.  
Two roots may join together but one of them will be in a special form called the \_\_\_\_\_.

12.  
 What kind of words are these: microfilm and telecommunication?  
 \_\_\_\_\_  
 compound terms  
 \_\_\_\_\_  
 a combining form  
 (a root plus a vowel) \_\_\_\_\_  
 a whole word \_\_\_\_\_

13.  
 Many medical terms are made of a combining form, a word root, and an ending. In the term micr/o/scop/ic,  
 micr/o the combining form is \_\_\_\_\_,  
 -ic the ending is \_\_\_\_\_,  
 micr- the root is \_\_\_\_\_.  
 Is there another word root? \_\_\_\_\_  
 scop- What might it be? \_\_\_\_\_

14.  
 There are two word roots in micr/o/scop/ic. The root *micr* is in the combining form because it is attached to a word that begins with a consonant. There is no need to add a vowel to the root *scop* because the ending *-ic* begins with a \_\_\_\_\_.  
 vowel

15.  
 Build a term from the combining form electr/o, the word root stat, and the ending -ic.  
 \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 electrostatic

16.  
 In the word hydroelectric,  
 word root electr is the \_\_\_\_\_,  
 word hydro is the \_\_\_\_\_,  
 ending -ic is the \_\_\_\_\_.

17.  
 Endings change the basic meaning of a root or foundation word. Examine the following sentences:  
 Joe's job was blast-ing the rocks.  
 Tejo was blast-ed by the cannon.  
 ending The meaning of *blast* is changed by its \_\_\_\_\_.

yes  
The endings added to the root changed its meaning.

18.  
A *suffix* is a word unit or syllable added to the end of a word or root that alters its meaning and creates a new word. In the words plant/*er*, plant/*ed*, and plant/*ing*, are these endings also suffixes? \_\_\_\_ Explain your answer.

\_\_\_\_\_

\_\_\_\_\_

porter  
one who carries

19.  
You can change the meaning of a word (or root) by adding a suffix. The suffix *-er* means *one who*. The word *port* means *to carry*. Add the suffix to the word root, *write* the word, and *explain* what it means.

\_\_\_\_\_

suffix

20.  
When *-able* is added to the end of *read* it forms the new word *read-able*. *-Able* is a meaningful unit added to the end of a word, creating a new word. So *-able* is a \_\_\_\_\_.

im-, sup-,  
trans-

21.  
A *prefix* is a meaningful unit joined to the beginning of a word or root that creates a new term. In the words im/*plant*, sup/*plant*, and trans/*plant*, the prefixes are \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.

prefix

22.  
In the word dis/*please*, *dis-* is a meaningful unit that comes before the word and changes the meaning of *please*; *dis-* is a \_\_\_\_\_.

23.  
Meaningful units that go in front of a root are called prefixes. Meaningful units placed after a root are called suffixes.

Label the units in this word:

un-                      manage                      -able

prefix    root    suffix    \_\_\_\_\_                      \_\_\_\_\_                      \_\_\_\_\_

meaning  
word

24.  
A suffix or a prefix is called a meaningful unit because when it is attached or added to a root or word it changes the \_\_\_\_\_ of the \_\_\_\_\_.

Our suggestion:  
-itis is a word unit  
added to the end of  
a word altering its  
meaning.

25.  
Explain why *-itis* in tendonitis is called a suffix.

\_\_\_\_\_  
\_\_\_\_\_  
OK, let's review what you've covered.

root

26.  
The fundamental base from which meaningful terms grow or are formed is called the \_\_\_\_\_.

prefix

27.  
A meaningful word or unit placed in front of a root or word is a \_\_\_\_\_.

suffix

28.  
A syllable or word part joined to the end of a root or word that changes its meaning is a \_\_\_\_\_.

combining form

29.  
When a vowel (a, e, i, o, u) is added to a word root, the word part resulting is called the \_\_\_\_\_.

compound word

30.  
When two or more word roots combine to form a meaningful word, that word is called a \_\_\_\_\_.

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# List of Illustrations

(All illustrations created by Sakrantip Blazicek of Ocala, Florida.)

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# 1 Basic Word Roots and Common Suffixes

*In Chapter 1 you will work with basic word roots and a handful of common suffixes. (These are listed in the Mini-Glossary below.) You'll examine many compound medical terms and discover meanings for all the parts. You'll practice adding various endings to roots and combining forms. By study and practice you'll make more than 30 meaningful medical terms.*

## Mini-Glossary

### Root Words

acr/o (*extremities*)

cardi/o (*heart*)

cyan/o (*blue*)

cyt/o (*cell*)

dermat/o, derm/o (*skin*)

duoden/o (*duodenum*)

electr/o (*electrical*)

eti/o (*cause*)

gastr/o (*stomach*)

gram/o (*record*)

leuk/o (*white*)

megal/o (*enlarged*)

path/o (*disease*)

### Suffixes

-algia (*pain*)

-ectomy (*excision of*)

-itis (*inflammation of*)

-ologist (*one who studies, a specialist*)

-ology (*study of*)

-osis, -a, -y (*condition*

*of, usually abnormal*)

-ostomy (*forming a new opening*)

-otomy (*incision into*)

-tome (*instrument that cuts*)

1.

*Acr/o* means extremities (arms, legs, and the head). To refer to one or more extremities, physicians use words containing

\_\_\_\_\_ / \_\_\_\_\_.

acr/o

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2.  
Extremities are the parts of the body farthest from the center of the body. You could say these parts are located on the extreme ends of the main body. What parts are they?  
arms, legs, and head \_\_\_\_\_
3.  
Extremities in the human body are also known as limbs. When referring to the arms or legs we use the word *acr/o*. What term could designate the head as an extremity?  
*acr, acr/o* \_\_\_\_\_
4.  
When you read a term containing *acr* or *acr/o* (the combining form), it should make you think of \_\_\_\_\_.  
extremities or limbs
5.  
Each of the terms *acr/o/megaly*, *acr/o/cyan/osis*, and *acr/o/dermat/itis* has a common word root that refers to what parts of the body? \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.  
arms, legs, head  
Write the combining form of the word root meaning extremities.  
*acr/o* \_\_\_\_\_
6.  
*Megal/o* means enlarged or oversized. A word containing *megal/o* means the part of the body or organ is \_\_\_\_\_.  
oversized, big, or enlarged
7.  
The suffix *-y* denotes a condition, usually abnormal. *Acr/o/megal/y* means the patient's abnormal condition involves extremities that are \_\_\_\_\_.  
oversized or enlarged



**Figure 1.1** Acromegaly

acr/o/megal/y  
acromegaly  
ak rō meg' a lē

8.  
Figure 1.1 on page 2 shows a man with abnormally large hands and head. The term that describes this man's abnormal condition is \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.

acro/megaly

9.  
Occasionally you may see a person with very large hands, feet, nose, and/or chin. The abnormal condition may be \_\_\_\_\_ / \_\_\_\_\_.

skin  
inflammation of the  
skin

10.  
Here are new suffixes/root words:  
-ologist means one who studies, a specialist  
-itis means inflammation of (something)  
dermat/o refers to the skin.  
A dermat/ologist is a specialist in the field of medicine who specializes in treating disease of the \_\_\_\_\_.

Dermatitis  
Dermatologist

Dermat/itis means \_\_\_\_\_.  
Underline the word root in the following medical terms. Now, circle the suffix in each term.

Dermatitis  
Dermatologist

acr/o/dermat/itis  
acrodermatitis  
ak rō der' ma tī' tis

11.  
Acrodermatitis is a term meaning inflammation of the skin of the extremities. A person displaying red, inflamed hands may have a condition of \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.

acrodermatitis

12.  
A patient may experience an inflammatory condition of her hands and lower arms. The physician may describe this abnormal condition as \_\_\_\_\_.

inflammation of  
extremities  
skin

13.  
Remembering that the term acrodermatitis means inflammation of the skin of the extremities, explain the following:  
-itis is a suffix that means \_\_\_\_\_.  
acr/o refers to \_\_\_\_\_.  
dermat is the root for \_\_\_\_\_.

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14.  
*Cyan/o* means blue or blueness. The suffix *-osis* denotes an abnormal condition. *Cyan/osis* means an abnormal condition of blueness.
- abnormal blueness of the extremities      What do you think *acr/o/cyan/osis* means? \_\_\_\_\_  
\_\_\_\_\_
- cyan or cyan/o      The part of the medical term that tells you the color blue is present is \_\_\_\_\_.
- osis      The part of the medical term denoting that an abnormal condition exists is the suffix \_\_\_\_\_.
- osis      15.  
To denote an abnormal condition, use the suffix \_\_\_\_\_.
- condition      Acrocyanosis may be defined as the abnormal \_\_\_\_\_  
extremities      of blueness of the \_\_\_\_\_.
16.  
Blueness of the extremities is usually due to a reduced amount of oxygen supply to the hands and feet and can be considered normal in a newborn. If the lungs don't take in enough oxygen or the heart doesn't pump enough good blood around the body, the patient's hands and feet may exhibit an abnormal condition described as \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.
- acr/o/cyan/osis*  
acrocyanosis  
ak rō sī ə nō'sis
17.  
When the lungs cannot move enough oxygen into the blood because of asthma, blueness of the extremities may result. This is another cause of \_\_\_\_\_.
- acrocyanosis
- the abnormal condition of blueness of the extremities      18.  
Acrocyanosis means \_\_\_\_\_  
\_\_\_\_\_.
19.  
*Dermat/osis* denotes an abnormal skin condition. The suffix that means abnormal condition is \_\_\_\_\_.
- osis
20.  
The suffix *-osis* means (usually abnormal) condition. Now, build a term that means an abnormal condition of blueness: \_\_\_\_\_ / \_\_\_\_\_.
- cyan/osis*  
cyanosis  
sī ə nō'sis

<p>dermat/osis dermatosis der ma tō'sis</p>	<p>21. Build a term meaning an abnormal skin condition: _____ / _____.</p>
<p>skin</p>	<p>22. The Greek word <i>tomos</i> means a piece cut off. From this word we have many words that refer to cutting: ectomy (cut out), otomy (cut into), -tome (an instrument that cuts). A dermatome is an instrument that cuts _____.</p>
<p>dermat/ome dermatome derm'ə tōm</p>	<p>23. A dermatome is a surgical instrument. When a physician wants a thin slice of a patient's skin for a skin graft, the doctor asks for a _____ / _____.</p>
<p>an abnormal condition of bluish discolor- ation of the skin</p>	<p>24. Dermat, dermat/o refer to the skin. Cyan/o/derm/a means _____ _____.</p>
<p>a disease or abnormal condition of the skin</p>	<p>Dermat/osis means _____ _____.</p>
<p>cyan/o/derm/a cyanoderma sī ə nō der'mä</p>	<p>25. Cyanoderma sometimes occurs when people swim too long in cold water. If a patient has a bluish discoloration of the skin, for any reason, the person may exhibit _____ / _____ / _____ / _____.</p>
<p>leuk or leuk/o</p>	<p>26. <i>Leuk/o</i> means white or abnormally white. In the term leuk/o/derm/a, the part that means white is _____.</p>
<p>a condition of white skin, or abnormally white skin</p>	<p>27. Leukoderma means _____ _____.</p>
<p>leuk/o/derm/a leukoderma lōō kō der' mā</p>	<p>28. Some people have much less color in their skin than is normal. Their skin is white. They may have _____ / _____ / _____ / _____.</p>

## 6 QUICK MEDICAL TERMINOLOGY

---

29.

*Cyt/o* refers to a cell or cells. *-ology* is a suffix that means the study of.

the study of cells

What does *cyt/ology* mean? \_\_\_\_\_

30.

There are several kinds of cells in blood. One kind is the *leuk/o/cyte*. A leukocyte is a \_\_\_\_\_.

white blood cell

31.

There are several different kinds of cells in the bloodstream. When a physician wants to know how many infection-fighting white blood cells are circulating, the doctor asks the lab technician to count the \_\_\_\_\_ / \_\_\_\_\_ /cytes.

*leuk/o/cyt/e*  
leukocyte  
lōō' kō sīt

32.

*-emia* is a suffix meaning blood. When a person's blood contains far too many white blood cells, it may indicate a condition sometimes described as a cancer of the blood. A term meaning literally *white blood* is \_\_\_\_\_ / \_\_\_\_\_.

*leuk/emia*  
leukemia  
lōō kē' mē ə

33.

In the term *acromegaly*, the combining form used for extremities is \_\_\_\_\_, the word root for oversized is \_\_\_\_\_, and the suffix meaning *condition of* is \_\_\_\_\_.

*acr/o*  
megal  
y

34.

Now try this. *Cardi/o* means heart. Another suffix meaning condition of is *-a*. What does *megal/o/cardi/a* mean? \_\_\_\_\_

a condition of oversized  
heart, or enlargement  
of the heart

35.

When any muscle exercises, it gets larger. If the heart muscle overexercises, an enlarged condition of the heart may occur. It is described as

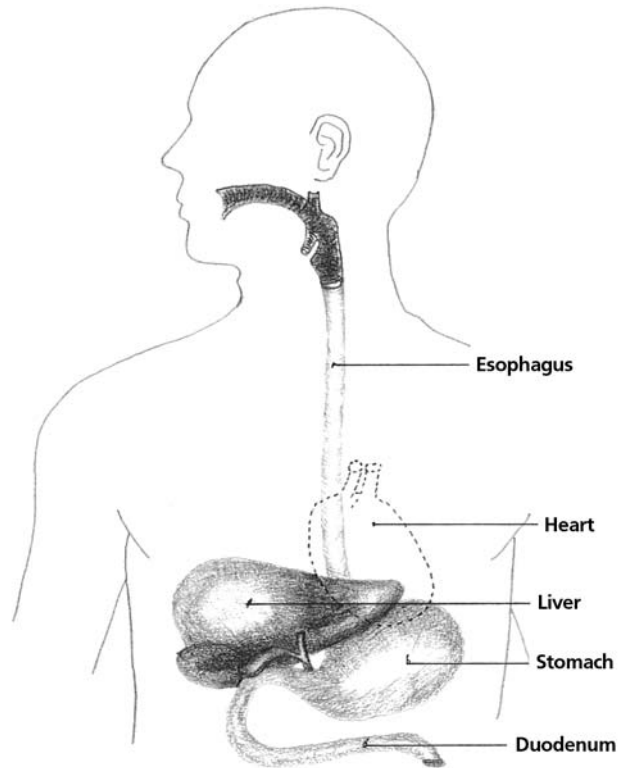
*megal/o/card/ia*  
megalocardia  
meg ə lō kär' dē ä

\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.

megalocardia or  
cardiomegaly

36.

When the heart muscle doesn't receive an adequate supply of oxygen, the heart may beat more often. Inadequate oxygen makes the heart work harder and may lead to an enlarged heart described as



**Figure 1.2** The Upper Digestive Tract (and Heart)

The digestive tract begins with the oral cavity. The teeth pulverize ingested food and soften it. The action of the tongue moves the partly digested food into the *esophagus* by swallowing. Then strong muscular contractions move the food to the *stomach*. In the stomach the food is further processed mechanically and chemically. Then it passes into the highly coiled intestine. The first part of the intestine is called the *duodenum*.

esophagus (esophag/o)	stomach (gastr/o)
duodenum (duoden/o)	heart (cardi/o)

**8 QUICK MEDICAL TERMINOLOGY**

---

megal/o/gastr/ia  
 megalogastria  
 meg ə lō gas' trē ä  
 or

gastr/o/megal/y  
 gastromegaly  
 gas' trō meg' a lē

oversized heart, or  
 enlargement of the  
 heart

(the same thing)

inflammation of the  
 heart

stomach

inflammation of the  
 stomach

extremities  
 blueness  
 white  
 stomach  
 cell  
 heart

37.

Try this one. *Gastr* is the word root for stomach. When the stomach enlarges so that it crowds other organs, an undesirable condition exists known as

\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ /ia.  
 enlarged stomach

or

\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ /y.  
 stomach enlarged

38.

Megalocardia means \_\_\_\_\_  
 \_\_\_\_\_.

What does cardiomegaly mean? \_\_\_\_\_

39.

The suffix *-itis* means inflammation.

What does carditis mean? \_\_\_\_\_  
 \_\_\_\_\_

Both gastr-, gastr/o mean \_\_\_\_\_.

Gastritis means \_\_\_\_\_  
 \_\_\_\_\_.

40.

Here's a quick review. Using the suggested answers, write the meaning of each of the following terms.

SUGGESTED ANSWERS:

abnormal condition of	heart
blueness	inflammation of
cell	skin
cutting instrument	stomach
enlarged, oversized	white
extremities	

acr/o \_\_\_\_\_  
 cyan/o \_\_\_\_\_  
 leuk/o \_\_\_\_\_  
 gastr/o \_\_\_\_\_  
 cyt/o \_\_\_\_\_  
 cardi/o \_\_\_\_\_







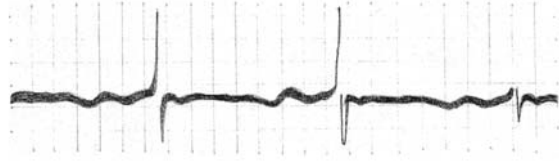


Figure 1.3 Electrocardiogram (ECG)

*Electrocardiography* is a method of recording electrical currents traversing the heart muscle just prior to each heartbeat. An electrocardiogram (ECG) is a graphic record of heart action currents that are obtained by electrocardiography.

cardiologist

51. A heart doctor who reads an electr/o/cardi/o/gram (a record of electrical impulses generated by the heart) is a specialist in heart problems or a \_\_\_\_\_ / \_\_\_\_\_.

a record of electrical waves given off by the heart (or equivalent)

52. Complete the meaning of electr/o/cardi/o/gram:  
Gram means a record or recording, electr/o means \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.

heart

and cardi/o means \_\_\_\_\_.

electr/o/cardi/o/gram  
electrocardiogram  
ē lek' trō kär' dē ə  
gram

53. The electr/o/cardi/o/gram is a record obtained by electr/o/cardi/o/graph/y. A technician can learn electrocardiography, but it takes a cardiologist to read the \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.  
electrical / heart / record

54.  
A physician specialist can look at a report that looks like this

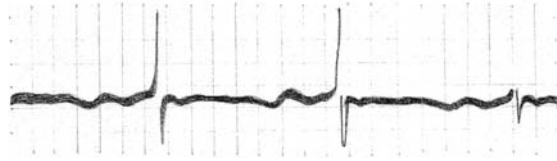


Figure 1.4 Electrocardiogram (ECG)

cardiologist  
electrocardiogram

and learn something about a patient's heart function. This specialist is probably a \_\_\_\_\_ and can read an \_\_\_\_\_ (ECG).

cardi/algia  
cardialgia  
kār dē al' jē a (There is no need to add a vowel to the root cardi because -algia begins with a vowel.)

55.  
The suffix *-algia* means pain. Form a word that means heart pain:  
\_\_\_\_\_ / \_\_\_\_\_  
heart pain

cardialgia

56.  
When a patient complains of pain in the heart, the symptom is known medically as \_\_\_\_\_.

stomach  
-algia

57.  
Gastralgia means pain in the stomach.  
*Gastr* is the root for \_\_\_\_\_.  
The suffix for pain is \_\_\_\_\_.

stomach  
to cut out, excise, or remove surgically

58.  
Gastr/ectomy means excision (removal) of all or part of the stomach. *Gastr* means \_\_\_\_\_.  
The suffix *-ectomy* means \_\_\_\_\_.

- gastr/ectomy  
gastrectomy  
gas trek' tō mē
59. When a patient's stomach ulcer perforates, the surgeon may need to remove part of the stomach. The medical term for the procedure is \_\_\_\_\_ / \_\_\_\_\_.  
(stomach) (excision of)
- gastrectomy
60. Cancer of the stomach may require a surgeon to remove all or part of the patient's stomach. This procedure is a \_\_\_\_\_.
- gastr/itis  
gastritis  
gas trī' tis
61. Form a word that means inflammation of the stomach:  
\_\_\_\_\_ / \_\_\_\_\_.
- duoden/um  
duodenum  
dōō ōd' nəm (or  
dōō ō dē' nəm)
62. The stomach empties its contents into the first section of the intestine, called the duodenum. *Duoden* is the word root for \_\_\_\_\_.
- gastr
- What is the root for stomach? \_\_\_\_\_
- stomach and  
duodenum
63. The suffix *-ostomy* means a procedure to form a new opening. Gastr/o/duoden/ostomy means forming a new opening between the \_\_\_\_\_ and \_\_\_\_\_.
- gastr/o/duoden/  
ostomy  
gastroduodenostomy  
gas' trō dōō ō de nos'  
tō mē
64. A surgeon may need to remove a portion of a diseased stomach. If the natural connection is removed, then the surgeon must form a new opening between the stomach and duodenum. This procedure is called \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.
65. When an abnormal condition exists between the stomach and the duodenum, a surgeon may need to perform a gastroduodenostomy, which means \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.
- a surgical procedure to  
form a new opening  
between the stomach  
and duodenum



74.

Let's review what you've covered. Using the suggested answers, write the meaning of each of the following terms.

SUGGESTED ANSWERS:

blueness	duodenum
cell	electrical
cause(s)	enlarged, oversized
changes due to disease	record of

duodenum  
changes due to disease  
record of  
cell  
electric  
cause  
enlarged, oversized  
blueness

duoden/o \_\_\_\_\_  
path/o \_\_\_\_\_  
gram/o \_\_\_\_\_  
cyt/o \_\_\_\_\_  
electr/o \_\_\_\_\_  
eti/o \_\_\_\_\_  
megal/o \_\_\_\_\_  
cyan/o \_\_\_\_\_

75.

Now try it with the suffixes you just learned.

SUGGESTED ANSWERS:

(abnormal) condition of	incision into
cutting instrument	inflammation of
form a new opening	of, or pertaining to
one who studies, specializes in	pain

of, or pertaining to  
inflammation of  
(abnormal) condition  
form a new opening  
cutting instrument  
incision into  
pain  
one who studies

-al \_\_\_\_\_  
-itis \_\_\_\_\_  
-osis, -a, -y \_\_\_\_\_  
-ostomy \_\_\_\_\_  
-tome \_\_\_\_\_  
-otomy \_\_\_\_\_  
-algia \_\_\_\_\_  
-ologist \_\_\_\_\_

76.

Now build some new words.

cyan/osis

A condition of blueness is \_\_\_\_\_ / \_\_\_\_\_.  
blueness condition

path/ologist

One who studies bodily changes produced by disease is a  
\_\_\_\_\_/\_\_\_\_\_.  
changes in the body one who studies

duoden/ostomy

A surgical procedure that forms a new opening in the duodenum is  
a \_\_\_\_\_ / \_\_\_\_\_.  
duodenum form a new opening

eti/o/logic/al

A term meaning of, or pertaining to, the study of causes of disease  
is \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.  
causes of disease the study of pertaining to

77.

While working through Chapter 1, you formed the following new medical terms. Read them one at a time and pronounce each aloud several times until you can articulate each term clearly and correctly. If a friend pronounces each term for you, could you spell it correctly? Try it.

acrocyanosis (ak rō sī ə nō' sis)

acrodermatitis

(ak rō der' ma tī'tis)

acromegaly (ak rō meg' a lē)

cardialgia (kār dē al' jē a)

cardiologist (kār dē ol' ə jist)

carditis (kār dī' tis)

cyanoderma (sī ə nō der' mä)

cyanosis (sī ə nō' sis)

cytology (sī tol' ə jē)

dermatologist

(der ma tol' ə jist)

dermatome (derm' ə tōm)

dermatosis (der ma tō' sis)

disease (diz ēz')

duodenal (dōō ō dē' nəl)

electrocardiogram

(ē lek' trō kār' dē ə gram)

etiological (ē' tē ō loj' i kəl)

gastralgia (gas tral' jē a)

gastrectomy

(gas trek' tō mē)

gastritis (gas trī' tis)

gastroduodenostomy

(gas' trō dōō ō de nos' tō mē)

leukemia (lōō kē' mē ə)

leukocyte (lōō' kō sīt)

leukoderma (lōō kō der' mä)

manifestation

(man' ə fes tā' shən)

megalocardia

(meg ə lō kār' dē ä)

megalogastria

(meg ə lō gas' trē ä)

pathologist (path ol' ə jist)

pathology (path ol' ə jē)

Before going on to Chapter 2, take the Chapter 1 Self-Test that follows.



---

**Chapter 1 Self-Test****Part 1**

From the list of definitions on the right, select the correct meaning for each of the terms in the left-hand column. Write the letter in the space provided.

- |                              |  |
|------------------------------|--|
| _____ 1. Megalocardia        | a. Study of, or pertaining to, causes (of disease)                                   |
| _____ 2. Cardiology          | b. A specialist in the field of skin diseases  |
| _____ 3. Duodenostomy        | c. A condition of blueness of the extremities  |
| _____ 4. Leukemia            | d. Enlargement of the heart  |
| _____ 5. Dermatologist       | e. A surgical procedure forming a new opening in the duodenum                        |
| _____ 6. Electrocardiography | f. Display, evidence of disease  |
| _____ 7. Acromegaly          | g. One who specializes in the study of structural and functional changes in the body |
| _____ 8. Gastritis           | h. Pain in the stomach   |
| _____ 9. Dermatome           | i. Inflammation of the stomach   |
| _____ 10. Manifestation      | j. Recordings of electrical waves of the heart                                       |
| _____ 11. Gastroduodenostomy | k. An abnormal condition of enlarged extremities                                     |
| _____ 12. Etiology           | l. A surgical instrument for cutting skin  |
| _____ 13. Acrocyanosis       | m. A surgical operation to make a new opening between the stomach and duodenum       |
| _____ 14. Pathologist        | n. The study of disease of the heart   |
| _____ 15. Gastralgia         | o. An abnormal condition of too many white blood cells                               |

**Part 2**

Write a medical term for each of the following:

1. Impaired bodily health \_\_\_\_\_
2. Bluish discoloration of the skin \_\_\_\_\_
3. White cell \_\_\_\_\_
4. Oversized or enlarged stomach \_\_\_\_\_
5. Evidence of disease \_\_\_\_\_
6. The study of causes of an illness \_\_\_\_\_
7. Excision or removal of the stomach \_\_\_\_\_
8. Pertaining to the duodenum \_\_\_\_\_
9. Generalized condition of blueness \_\_\_\_\_
10. Heart pain \_\_\_\_\_
11. Inflammation of the heart \_\_\_\_\_
12. An abnormal condition of white skin \_\_\_\_\_
13. Inflammation of the skin of the extremities \_\_\_\_\_
14. Study of cell(s) \_\_\_\_\_
15. An abnormal condition of the skin \_\_\_\_\_

**ANSWERS**

**Part 1**

1. d
2. n
3. e
4. o
5. b
6. j
7. k
8. i
9. l
10. f

**Part 2**

1. disease
2. cyanoderma
3. leukocyte
4. megalogastria
5. manifestation
6. etiology
7. gastrectomy
8. duodenal
9. cyanosis
10. cardialgia

- |       |                    |
|-------|--------------------|
| 11. m | 11. carditis       |
| 12. a | 12. leukoderma     |
| 13. c | 13. acrodermatitis |
| 14. g | 14. cytology       |
| 15. h | 15. dermatosis     |

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# 2 More Word Roots, Suffixes, and Prefixes

*In Chapter 2 you will cover more sophisticated terms, word roots, and suffixes, and you'll begin using prefixes. Teaching sequences in this unit aim to expand your learning by combining words you covered in Chapter 1 with some new ones. We introduced new ideas as well as useful medical terms to improve retention and make your practice exercises interesting. Now, let's get started.*

## Mini-Glossary

### Root Words

aden/o (gland)

arthr/o (joint)

carcin/o (malignancy)

cele/o, o/cele (hernia)

cephal/o (head)

chondr/o (cartilage)

cost/o (ribs)

dent/o (tooth)

emes/is (vomiting)

hist/o (tissue)

laryng/o (larynx)

lip/o (fat)

malac/o (soft)

morph/o (structure of)

muc/o (mucus)

onc/o (tumor)

ost/o, oste/o (bone)

plast/o (repair)

trach/e (trachea)

troph/o (development)

### Prefixes

en-, endo- (in, inside, within)

ex-, ex/o- (outside, out)

hyper- (excessive)

hypo- (under)

inter- (between)

### Suffixes

-al, -ar, -ic (of, or pertaining to)

-oid (resembling)

-oma (tumor)

-ism (medical condition, disease)

Before you begin Chapter 2, complete the Review Sheet for Chapter 1. It will help you get a running start as you continue your studying. You'll find review sheets beginning on page 261.

1.  
Examine the terms hyper/trophy, hyper/emia, and hyper/emesis. *Hyper-* means excessive, more than normal amount. *Hyper-* placed in front of trophy, emia, and emesis changes the meaning of the terms. Therefore, hyper- is a \_\_\_\_\_ (prefix/suffix?).

prefix

2.  
Hyper/thyroid/ism is a medical condition of the thyroid gland resulting in excessive thyroid gland activity. The prefix expressing higher than normal activity of the thyroid gland is \_\_\_\_\_.

hyper

3.  
The suffix *-ism* indicates there is a medical condition involving some specified thing or body part. In the case of hyper/thyroid/ism the medical condition involves what body part? \_\_\_\_\_

thyroid gland

Here's a suggestion:  
Hyperthyroidism means the patient has a medical condition resulting from excessive activity of the thyroid gland.

4.  
*Hyper-* means something is excessive. *Thyroid* tells you what part is involved. The suffix *-ism* means there is a resulting medical condition. In your words, explain the meaning of the term hyper/thyroid/ism.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

hyper/emesis  
hyperemesis  
hī per em' ə sis  
hyperemesis

5.  
*Emesis* is a word that means vomiting. A word that means excessive vomiting is \_\_\_\_\_ / \_\_\_\_\_.  
Gallbladder attacks can cause excessive vomiting. This, too, is called \_\_\_\_\_.

hyper/troph/y  
hypertrophy  
hī per' trō fē

6.  
*Hyper/trophy* means overdevelopment; *troph/o* comes from the Greek word for nourishment. Note the connection between nourishment and development. Overdevelopment is called \_\_\_\_\_ / \_\_\_\_\_ / *y*.  
a condition of excessive development

hypertrophy

Muscles also can overdevelop or \_\_\_\_\_.  
(a verb form)

7.  
hypertrophy Many organs can overdevelop. If the heart overdevelops, the condition is called cardiac \_\_\_\_\_.
8.  
hypo- The prefix *hypo-* is just the opposite of hyper-. The prefix for under or less than normal is \_\_\_\_\_.
9.  
skin Derm/o refers to the \_\_\_\_\_. The suffix -ic means of, or pertaining to. Hypo/derm/ic means pertaining to under the \_\_\_\_\_.
10.  
hypo/derm/ic A hypodermic needle is short because it goes just under the skin. A hypodermic shot given superficially is administered with a \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ needle.  
under / skin / pertaining to
11.  
aden/itis *Aden/o* is used in words that refer to glands. Build a word that means inflammation of a gland:  
adenitis  
ad ə nī' tis \_\_\_\_\_ / \_\_\_\_\_.  
gland / inflammation of
12.  
aden/ectomy Since -ectomy means excision (or surgical removal of), the word for surgical removal of a gland is  
adenectomy  
ad ə nek' tō mē \_\_\_\_\_ / \_\_\_\_\_.  
gland / surgical removal
13.  
adenectomy If a gland is inflamed or abnormal, part or all of it may be excised. Excision of a gland is \_\_\_\_\_.
14.  
aden/oma The suffix -oma means tumor. Form a word that means tumor of a gland:  
adenoma  
ad ə nō' mä \_\_\_\_\_ / \_\_\_\_\_.
15.  
surgical removal, or excision, of the thyroid gland Try this. Sometimes the thyroid gland develops a tumor. A patient's history might read, ". . . because of the presence of a thyroid adenoma, thyroidectomy is indicated." What is a thyroid/ectomy?  
\_\_\_\_\_  
\_\_\_\_\_

16.

The suffixes *-ic*, *-al*, and *-ar* mean of, or pertaining to, the attached word.

spleen

A splenic tumor is a tumor of the \_\_\_\_\_.

tonsil

A tonsillar tumor is a tumor pertaining to the \_\_\_\_\_.

in the duodenum

Where would you expect to find a duodenal tumor? \_\_\_\_\_  
\_\_\_\_\_

17.

*Carcin/o* is the root for cancer. The suffix *-oma* means tumor. A carcinoma is a \_\_\_\_\_.

cancerous tumor

18.

A carcinoma may occur in almost any part of the body. A cancerous tumor of the spleen is called \_\_\_\_\_ carcinoma.

splenic

carcinoma

Cancer of the tonsil is tonsillar \_\_\_\_\_.

of, or pertaining to

The suffixes *-ic*, *-ar*, and *-al* mean \_\_\_\_\_.

19.

An adenoma is a glandular tumor; *-oma* means \_\_\_\_\_.

tumor

A lip/oma is a tumor of fatty tissue.

fat, fatty tissue

*Lip/o* is the combining form for \_\_\_\_\_.

lip/oma

lipoma

li po' ma

20.

A fatty tumor is called a \_\_\_\_\_ / \_\_\_\_\_.

21.

Lipoma is a fatty tumor; *-oid* is a suffix meaning like or resembling. Using the word root for fatty tissue, build a term that means fatlike, or resembling fat: \_\_\_\_\_ / \_\_\_\_\_.

lip/oid

lipoid

lip' oid

22.

The word lipoid is used in chemistry and pathology. It describes a substance that looks like fat, dissolves like fat, but is not fat. Cholesterol is an alcohol that resembles fat; therefore, cholesterol is a \_\_\_\_\_ / \_\_\_\_\_ substance.

lip/oid

fat

like



muc/oid  
 mucoid  
 myōō' koid

23. *Muc/oid* means resembling mucus. There is a substance in connective tissue that resembles mucus. This is called a \_\_\_\_\_ / \_\_\_\_\_ substance.

resembling mucus

24. There is a protein in the body that is said to be mucoid in nature. Mucoid means \_\_\_\_\_.

mucoid  
 lipid

25. A substance that resembles mucus is best described as \_\_\_\_\_.

A substance resembling fatty tissue is called a \_\_\_\_\_ substance.

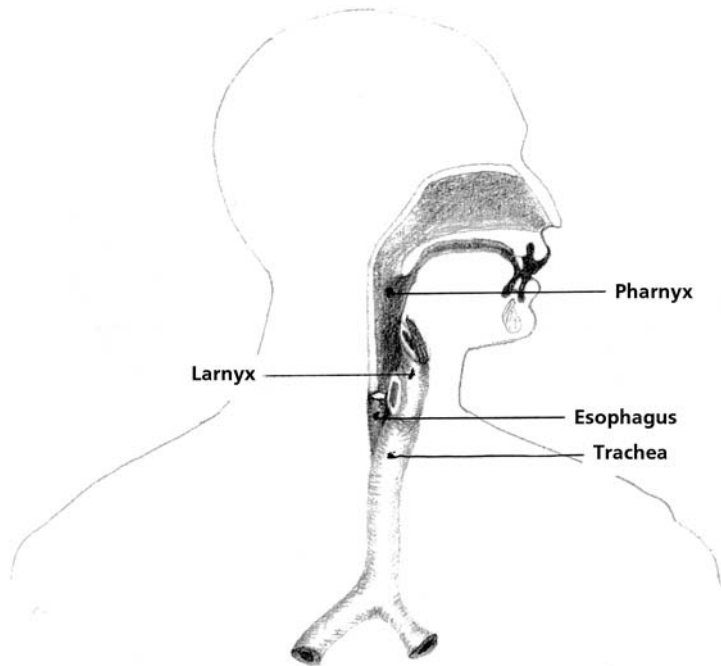


Figure 2.1 The Upper Respiratory Tract

The respiratory tract conducts oxygen-rich air to the lungs where oxygen can be readily absorbed by the blood. It removes carbon dioxide-laden air to the external atmosphere. The *pharynx* filters and

warms the air we breathe and conducts it into the *larynx*. The larynx protects against inadvertent inhaling of solid matter and contains the vocal cords, the mechanism of sound production. Leading from the larynx is the windpipe, more correctly known as the *trachea*.

pharynx (pharyng/o)      trachea (trache/o)  
larynx (laryng/o)

larynx

26.  
The larynx or *voice box* contains the vocal cords. *Laryng/o* is the combining form for building words referring to the voice box, also called the \_\_\_\_\_.

laryng/itis  
laryngitis  
lair an jī' tis

Build a term meaning inflammation of the larynx:  
\_\_\_\_\_ / \_\_\_\_\_.

inflammation of the  
larynx

27.  
After a bad cold, a patient may develop laryngitis, which means \_\_\_\_\_.

(kō los' tō mē)  
permanent artificial  
opening into the  
colon

28.  
Now, you'll add a few new suffixes to your growing vocabulary. An obstruction of the colon may require a new opening into the colon that will be *permanent*.

*Col*, *col/o* refer to the colon, or large bowel. The suffix *-ostomy* means a permanent artificial opening into.

*Col/ostomy* means \_\_\_\_\_.

-ostomy

29.  
The suffix for a permanent opening is \_\_\_\_\_.

(trā kē ot' ō mē)  
an incision into, or  
temporary opening  
into, the trachea, or  
windpipe

30.  
Take a look at Figure 2.1. An obstruction of the trachea makes breathing very difficult, or even impossible. In an emergency, a physician may make an incision into the windpipe to permit a free flow of air to the patient's lungs.

*Trache*, *trache/o* refer to the trachea, or *windpipe*. The suffix *-otomy* means incision into, or a *temporary* opening.

*Trache/otomy* means \_\_\_\_\_.

31.  
The suffix meaning a temporary opening, or incision into, is \_\_\_\_\_.

-otomy

32.  
Which suffix would you use to indicate creation of a permanent artificial opening? \_\_\_\_\_

-ostomy

Which suffix means making an incision into, or creating a temporary opening? \_\_\_\_\_

-otomy

creation of a permanent opening into the colon

32.  
Colostomy means \_\_\_\_\_.

incision into, or temporary opening into, the trachea

Tracheotomy means \_\_\_\_\_.

34.  
Time for a quick review. Using the suggested answers, write a meaning for each of the following word roots.

SUGGESTED ANSWERS:

fat, fatty	mucus
larynx	skin
cancer, malignant	spleen

fat, fatty	lip/o _____
spleen	splen/o _____
skin	derm/o _____
larynx	laryng/o _____
mucus	muc/o _____
cancer, malignant	carcin/o _____

35.  
Now do the same with the following suffixes.

SUGGESTED ANSWERS:

incision into, temporary opening	a new (permanent) opening into
like, or resembling	development
of or pertaining to	vomiting
tumor	excision of

development

excision of

-trophy \_\_\_\_\_

-ectomy \_\_\_\_\_

incision into, temporary opening a permanent surgical opening into of, or pertaining to like, or resembling vomiting tumor	-otomy _____ -ostomy _____ -ic, -ar, -al _____ -oid _____ -emesis _____ -oma _____
---	---

36.  
Complete the following:

under, less over, excessive	Hypo- is a prefix meaning _____. Hyper- is a prefix meaning _____
--------------------------------	--

37.  
Build a medical term for each of the following:

muc/oid	resembling mucus _____ / _____ <div style="display: flex; justify-content: space-around; width: 100%; font-size: small;"> <span>mucus</span> <span>like</span> </div>
splen/ic	pertaining to the spleen _____ / _____ <div style="display: flex; justify-content: space-around; width: 100%; font-size: small;"> <span>spleen</span> <span>of the</span> </div>
aden/ectomy	excision of a gland _____ / _____ <div style="display: flex; justify-content: space-around; width: 100%; font-size: small;"> <span>gland</span> <span>excision of</span> </div>
hyper/trophy	overdevelopment _____ / _____ <div style="display: flex; justify-content: space-around; width: 100%; font-size: small;"> <span>excessive</span> <span>development</span> </div>
hypo/derm/ic	under the skin _____ / _____ / _____ <div style="display: flex; justify-content: space-around; width: 100%; font-size: small;"> <span>under</span> <span>skin</span> <span>pertaining to</span> </div>
laryng/ostomy	permanent opening into the larynx _____ / _____ <div style="display: flex; justify-content: space-around; width: 100%; font-size: small;"> <span>larynx</span> <span>permanent</span> </div>

38.  
Here are two terms to define.

a condition of excess development, oversized	Hypertrophy means _____ _____
of, or pertaining to, under the skin	Hypodermal means _____ _____

This is a good place to stop and take a short break.

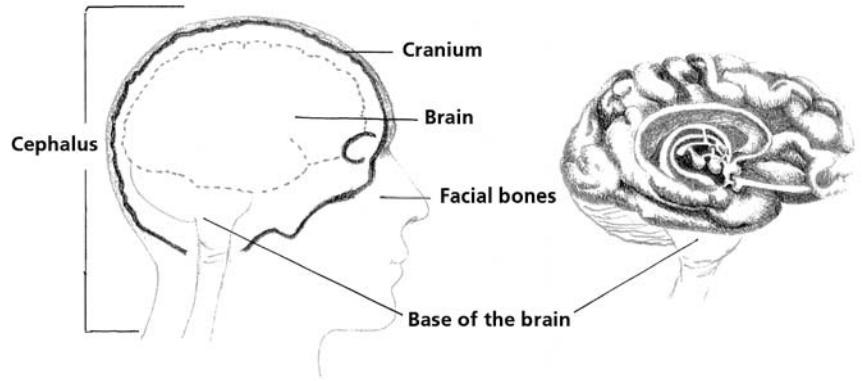


Figure 2.2 The Head

*Cephalus* is a term that refers to the entire head. It is composed of both the cranium and facial bones. The *cranium* (or skull) is a bony vault protecting the contents of the head. The face is the front portion of the head and includes the eyes, nose, mouth, forehead, cheeks, and chin. The cranium encloses the *cerebrum*, also known as the brain. The brain is the center of sensory awareness and movement, emotions, rational thought and behavior, foresight and planning, memory, speech, language, and interpretation of language.

- cephalus, head including skull and facial bones (cephal/o)
- cranium (crani/o)
- cerebrum (cerebr/o)

Use the illustration of the head to help you with the frames that follow.

39.

Welcome back. At this stage of word-building, students sometimes find they have one big headache. Both ceph/algia and cephal/algia mean pain in the head. The combining form and root for head are \_\_\_\_\_ and \_\_\_\_\_.

cephal/o  
ceph

40.

To indicate pain we use -algia. Any headache may be called \_\_\_\_\_ / \_\_\_\_\_ or \_\_\_\_\_ head / \_\_\_\_\_ pain \_\_\_\_\_ / \_\_\_\_\_ head / \_\_\_\_\_ ache \_\_\_\_\_.

ceph/algia or  
cephal/algia  
cephalgia  
(sef ə lal' jē ä)

41.  
The word root and combining form for head is *ceph*, *cephal/o*. Two words for pain in the head are \_\_\_\_\_  
\_\_\_\_\_.

42.  
Cephalalgia means \_\_\_\_\_.  
Cephal/ic means \_\_\_\_\_  
\_\_\_\_\_.

43.  
A case history reporting head wounds due to an accident might read, “\_\_\_\_\_ / \_\_\_\_\_ lacerations were present.”

44.  
A tumor located on the head might be noted as a \_\_\_\_\_ tumor.

Prefix	Meaning
en-, endo-	in, inside, within
ex-, exo-	out, outside completely

Use the table to help with the items that follow.

45.  
Cephal/o means head. What does *encephal/o* mean?  
\_\_\_\_\_.

46.  
Since the brain is enclosed inside the head’s bony vault, *encephal/o* means the organ inside the head, or the \_\_\_\_\_.

47.  
Using the word root for head, build words meaning the following:  
inflammation of the brain  
\_\_\_\_\_ / \_\_\_\_\_  
brain inflammation of  
brain tumor \_\_\_\_\_ / \_\_\_\_\_  
brain tumor of

48.  
What does endocarditis mean? \_\_\_\_\_  
\_\_\_\_\_

49.  
 Refer to the table in question 44 for help. Select a prefix meaning out, or completely outside of: \_\_\_\_\_.  
 en-, endo- or ex-, exo-

50.  
*Exo/genous* means originating completely outside of an organ or part. *Genous* takes its meaning from a Latin word meaning to produce or originate.

exo- What part of the term means completely outside of? \_\_\_\_\_  
 exo/genous Something originating completely outside of an organism, cell, or  
 ex' oj' ə nus organ is called \_\_\_\_\_ / \_\_\_\_\_.  
 outside produced or originating

endo/genous Now build a word that indicates something is produced or  
 en' doj' ə nus originates from within a cell or organism:  
 \_\_\_\_\_ / \_\_\_\_\_.  
 within produced or originating

51.  
 Try these. Here are some common English words often used in the medical world. Write what each means.

hale (breathe)      cise (cut)      spire (breathe)  
 breathe out Exhale means \_\_\_\_\_.  
 cut out Excise means \_\_\_\_\_.  
 breathe out (It also means to die or breathe out for the last time.) Expire means \_\_\_\_\_.

52.  
 Write two forms of a prefix for each of the following.  
 en-, endo- in, inside of, within \_\_\_\_\_, \_\_\_\_\_  
 ex-, exo- out, completely outside of \_\_\_\_\_, \_\_\_\_\_

53.  
 The Greek word for hernia is *kele*. From this we derive the combining forms *cele/o* or *o/cele*. Encephal/o/cele is a word meaning herniation of \_\_\_\_\_ tissue.

brain

encephal/o/cele  
encephalocele  
en səf' a lō sēl

54.  
Any hernia is a protrusion of a body part or an organ from its natural cavity. Herniation is expressed by cele. A protrusion of brain tissue from its natural cavity is an \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.  
brain (inside the head) hernia

encephalocele

55.  
Increased fluid inside the head sometimes causes herniation at the base of the brain. Herniation of the brain in medical language is called an \_\_\_\_\_.

a condition of softened  
brain tissue

56.  
Malac/ia is a word meaning soft, or softened, tissue. Encephal/o/malac/ia means \_\_\_\_\_.

encephal/o/malac/ia  
encephalomalacia  
en səf' a lō mə la' zhə

57.  
*Malac/o* is the combining form for soft, or softened. The term meaning softened brain tissue is \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.  
brain tissue softened a condition of

encephalomalacia

58.  
An accident causing brain injury could result in softened brain tissue, called \_\_\_\_\_.

oste/itis  
osteitis  
os tē ī' tis

59.  
*Oste* is the root referring to bone. A word meaning inflammation of the bone is \_\_\_\_\_ / \_\_\_\_\_.

a condition of softened  
bone tissue

60.  
What do you think oste/o/malac/ia means? \_\_\_\_\_

oste/o/malac/ia  
osteomalacia  
os' tē ō mə lā' zhə

61.  
Insufficient calcium in a young person's diet may lead to gradual softening and bending of bones. This disorder is called \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.  
bone softened condition



- osteomalacia 62. A disorder of the parathyroid gland can cause calcium to be withdrawn from bones. The resulting condition may be called \_\_\_\_\_.
- oste/oma 63. A hard outgrowth on any bone could be a bone tumor. In medical terms, it would be referred to as an osteoma os tē ō' mā \_\_\_\_\_ / \_\_\_\_\_.
- a tumor inside (the center canal of the bone) What does end/oste/oma mean? \_\_\_\_\_
- surgical repair of a joint(s) 64. *Arthr/o* refers to joints; *plast/y* means surgical repair of. What does *arthr/o/plast/y* mean? \_\_\_\_\_
- arthr/o/plast/y 65. Think of a plastic surgeon building a new nose or doing a face-lift. arthroplasty These are surgical repairs or restoration. When a joint has lost its ability to move, movement can sometimes be restored by an arth' rō plas' tē \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ y \_\_\_\_\_.  
joint repair or restore (process/procedure)
- arthro/plasty 66. If a child is born without a joint, sometimes one can be formed by a surgical procedure called \_\_\_\_\_ / \_\_\_\_\_.
- arthr/itis 67. Form a word that means inflammation of a joint: arthriti s arth rī' tis \_\_\_\_\_ / \_\_\_\_\_.  
joint inflammation of
- arthr/otomy 68. Now form a word that means incision into a joint: arthrotomy arth rot' ō mē \_\_\_\_\_ / \_\_\_\_\_.  
joint temporary opening

69.  
 The word oste/o/chondr/itis means inflammation of the bone and cartilage. The word root for cartilage must be  
 chondr \_\_\_\_\_.

bone Oste, oste/o mean \_\_\_\_\_.

70.  
 Analyze oste/o/chondr/itis:  
 oste/o combining form for bone \_\_\_\_\_  
 chondr word root for cartilage \_\_\_\_\_  
 -itis suffix for inflammation \_\_\_\_\_

71.  
 Now put all the parts together:  
 oste/o/chondr/itis os' tē ō kon drī' tis  
 \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.  
 bone cartilage inflammation of

inflammation of bone and cartilage  
 What does osteochondritis mean? \_\_\_\_\_  
 \_\_\_\_\_

72.  
 Chondr/ectomy means \_\_\_\_\_  
 excision of cartilage \_\_\_\_\_.

73.  
 Cost/al means pertaining to the ribs. Inter/cost/al means pertaining to between the ribs. The prefix for between is \_\_\_\_\_.  
 The suffix -al means \_\_\_\_\_.

74.  
 There are short strong muscles between the ribs. These muscles move the ribs during breathing and are called  
 inter- in ter kos' t'l  
 inter/cost/al intercostal  
 \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ muscles.  
 between ribs

75.  
 One set of between-the-ribs muscles expands the rib cage when breathing in to make room for inflated lungs. When exhaling, the rib cage is made smaller by another set of \_\_\_\_\_ muscles.  
 intercostal (between-the-ribs)

teeth teeth	76. A <i>dent</i> /ist takes care of _____. A <i>dent</i> /ifrice is used for cleaning _____.
spaces between the teeth	Interdental spaces means _____ _____.
dent/algia dentalgia den tal' jē a	77. Try making a few new words. Pain in the teeth, or a toothache, is called _____ / _____.
dent/oid dentoid den' toid	A word that means tooth-shaped or resembling a tooth is _____ / _____.
(If you're not sure, look it up.)	78. Try these. Pathogenic means something that produces disease. What is a pathogenic organism? _____ What does pathology mean? _____ Therefore, pathological means _____ _____.
Excessive vomiting is evidence of a disease process.	79. Explain each of the following statements in simple language. Hyperemesis is a manifestation of a pathological condition. _____ _____
A graphic representation of brain activity (EEG) is necessary to determine the cause of brain disease (or something similar in your words).	Electroencephalography (EEG) is often the first step toward a diagnosis of encephalopathy. _____ _____ _____

80.

It's time to review again. Using the suggested answers, write the meaning of each of the following terms.

SUGGESTED ANSWERS:

bone	joint
cartilage	rib
head	soft, soften
hernia	tooth, teeth

joint	arthr/o _____
hernia	cele/o _____
head	cephal/o _____
cartilage	chondr/o _____
rib	cost/o _____
tooth, teeth	dent/o _____
soft, soften	malac/o _____
bone	ost-, oste-, oste/o _____

81.

These word parts are used as suffixes.

repair of (restoration or plastic surgery)	-plasty means _____.
hernia (protrusion of a body part or an organ from its natural cavity)	-cele means _____.

82.

Here are some easy ones.

in, within, inside	end-, endo- is a prefix meaning _____.
out, completely outside of	ex-, exo- is a prefix meaning _____.

83.

Build a medical term for each of the following:

arthro/plasty	restoration of a joint _____ / _____ joint plastic surgery of
inter/costal	between the ribs _____ / _____ between ribs
chondro/malacia	softening of cartilage _____ / _____ cartilage softened
oste/oma	bony tumor _____ / _____ bone tumor of

encephalo/cele	herniation of the brain _____ / _____ inside the head hernia of
dent/oid	resembling teeth _____ / _____ teeth resembling
ceph/algia	headache _____ / _____ head pain
arthr/otomy	incision into a joint _____ / _____ joint temporary opening

Here are our suggestions:  
tumors, branch of medicine  
structure of an organ, part  
microscopic tissues (of) a part  
changes, caused by disease

84.

You just learned the suffix -oma, meaning tumor. Now, here are some more very useful terms often used in discussion of tumors.

Read each definition. Then underline a key word or two to help you remember what the term means.

*Oncology* is the branch of medicine dealing with tumors.

*Morphology* is the biological science dealing with the structure of an organ or part of the body.

*Histology* is the study of the microscopic tissues that make up a part or a structure.

*Pathology* is the study of changes in structure and function caused by disease.

85.

Complete each of the following statements. Look back at the definition if necessary.

tumors	Onc/o refers to _____.
tissues (of a part, organ)	Hist/o refers to _____.
changes (due to disease)	Path/o refers to _____.
structure (of an organ, part)	Morph/o refers to _____.

86.

Complete each definition.

structure	Morphology is the study of the _____ of an organ or part.
tissues	Histology is the study of microscopic _____ making up a part or structure.
tumors	Oncology is the study of _____.
changes	Pathology is the study of _____ caused by disease.

87.

Complete each of the following definitions:

histologist One who studies the tissue *structure* under a microscope is a \_\_\_\_\_.

oncologist A specialist in the care and treatment of patients with *tumors* is an \_\_\_\_\_.

morphologist One who studies the *structure* of living organisms is a \_\_\_\_\_.

pathologist A specialist who studies *changes* in structure and function resulting from disease is a \_\_\_\_\_.

88.

Here are more than 30 medical terms you worked with in Chapter 2. Read each one. Say it aloud several times and explain what it means *aloud* (so your ears and brain can hear what you learned). Use the pronunciation key to help you practice if you are unsure.

adenectomy (ad ə nek' tō mē)

adenitis (ad ə nī' tis)

adenoma (ad ə nō' mā)

arthroplasty (ärth' rō plas' tē)

arthrotomy (ärth rot' ō mē)

carcinoma (kär sin ō' mā)

cephalalgia (sef ə lal' jē ä)

cephalic (se fal' ik)

chondritis (kon drī' tis)

colostomy (kō los' tō mē)

dentalgia (den tal' jē ä)

encephalitis (en sef ə lī' tis)

encephalocele (en sef' ə lō sēl)

encephaloma (en sef' ə lō' mā)

endosteoma

(en dos tē ō' mā)

exogenous (eks oj' ə nus)

histology (his tol' ō jē)

hyperemesis (hī per em' ə sis)

hypertrophy (hī per' tro fē)

hypodermic (hī pō der' mik)

intercostal (in ter kos' t'l)

laryngitis (lair an jī' tis)

lipoid (lip' oid)

lipoma (lī pō' mā)

morphology (mor fäl' ō jē)

mucoid (myōō' koid)

oncology (on kol' ō jē)

osteitis (os tē ī' tis)

osteomalacia (os' tē ō mā lā' zhə)

pathologist (path ol' ō jist)

thyroidectomy

(thī roy dek' tō mē)

tracheotomy (trā kē ot' ō mē)

Take a short break and then test yourself with the Chapter 2 Self-Test, next page.

---

## Chapter 2 Self-Test

### Part 1

From the list on the right, select the correct meaning for each of the terms in the left-hand column. Write the letters in the space provided.

- |                         |  |
|-------------------------|--|
| _____ 1. Osteomalacia   | a. Overdevelopment                                   |
| _____ 2. Intercostal    | b. Study of microscopic tissues                      |
| _____ 3. Emesis         | c. Surgical removal of cartilage                     |
| _____ 4. Adenoma        | d. Between the ribs                                  |
| _____ 5. Laryngotomy    | e. Surgical repair of a joint                        |
| _____ 6. Lipoid         | f. Softening of bone tissue                          |
| _____ 7. Cephalalgia    | g. Herniation of brain tissue                        |
| _____ 8. Morphology     | h. Tumor of glandular tissue                         |
| _____ 9. Carcinogenic   | i. Headache  |
| _____ 10. Encephalocele | j. Incision into the larynx                          |
| _____ 11. Arthroplasty  | k. Pertaining to producing cancer                    |
| _____ 12. Oncologist    | l. Resembling fat                                    |
| _____ 13. Hypertrophy   | m. Vomiting, to vomit                                |
| _____ 14. Chondrectomy  | n. Medical specialist dealing with tumors            |
| _____ 15. Histology     | o. The science of studying the structure of an organ |

**Part 2**

Complete each of the medical terms on the right with the appropriate prefix and/or suffix:

- |  |                     |
|--|---------------------|
| 1. Surgical removal of the thyroid gland                               | Thyroid _____       |
| 2. Inflammation of glandular tissue                                    | Aden _____          |
| 3. Malignant tumor   | Carcin _____        |
| 4. Excessive vomiting  | _____ emesis        |
| 5. Resembling mucus  | Muc _____           |
| 6. Tumor specialist  | Onc _____           |
| 7. Making a new permanent opening into the colon                       | Col _____           |
| 8. Inflammation inside the head  | _____ cephal _____  |
| 9. Tumor of fat tissue   | _____ oma           |
| 10. Pertaining to the teeth  | Dent _____          |
| 11. To breathe out   | _____ hale          |
| 12. Pertaining to between the ribs                                     | _____ cost _____    |
| 13. A tumor inside the bone canal                                      | _____ oste _____    |
| 14. Medical condition resulting from an <i>underactive</i> thyroid     | _____ thyroid _____ |
| 15. Originating or produced completely outside of an organ or organism | _____ genous        |

**ANSWERS**

**Part 1**

1. f.
2. d.
3. m.
4. h.
5. j.
6. l.
7. i.
8. o.
9. k.

**Part 2**

1. Thyroidectomy
2. Adenitis
3. Carcinoma
4. Hyperemesis
5. Mucoïd
6. Oncologist
7. Colostomy
8. Encephalitis
9. Lipoma



- |        |                    |
|--------|--------------------|
| 10. g. | 10. Dental         |
| 11. e. | 11. Exhale         |
| 12. n. | 12. Intercostal    |
| 13. a. | 13. Endosteoma     |
| 14. c. | 14. Hypothyroidism |
| 15. b. | 15. Exogenous      |

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# **3** Basic Anatomical Terms and Abnormal Conditions

*In Chapter 3 you will put together 40 new medical terms. You'll work with some new prefixes and suffixes and practice using those you covered in earlier chapters. Although this program doesn't attempt to teach anatomy of the human body, the language of medicine is all about the human body and what affects its parts. So in this chapter you'll bring anatomy and medicine together by focusing on a couple of anatomical areas and some abnormal conditions that affect them.*

*In Chapter 3 and beyond you will find that terms are largely grouped by body system: for example, terms dealing with the heart are grouped together, and terms dealing with the gastrointestinal system are grouped together. Further, we will discuss why most medical practitioners use these groupings as an important tool of communication.*

## **Mini-Glossary**

### **Root Words**

abdomin/o (abdomen)	ot/o (ear)
cephal/o (head)	pelv/i (pelvis)
chol/e (bile, gall)	phob/ia (fear)
cocci (coccus)	py/o (pus)
crani/o (cranium, skull)	rhin/o (nose)
cyst/o (bladder, sac)	staphyl/o (grape)
diplo/o (double)	strept/o (chain)
hydro (water)	therap/o (treatment)
lith/o (stone, calculus)	thorac/o (thorax)
metr/o, meter (measure)	

**Prefixes**

- ab- (*away from*)
- ad- (*toward*)

**Suffixes**

- ar (*pertaining to*)
- centesis (*puncture of a cavity*)
- genesis, gen/o (*produce, originate*)
- meter (*measuring instrument*)
- orrhea (*flow, discharge*)

Before you begin Chapter 3, take the time to complete the Review Sheet for Chapter 2. It will refresh your memory of the terms and word parts you studied. It may surprise you to find out how much you've learned. Try it (page 263).

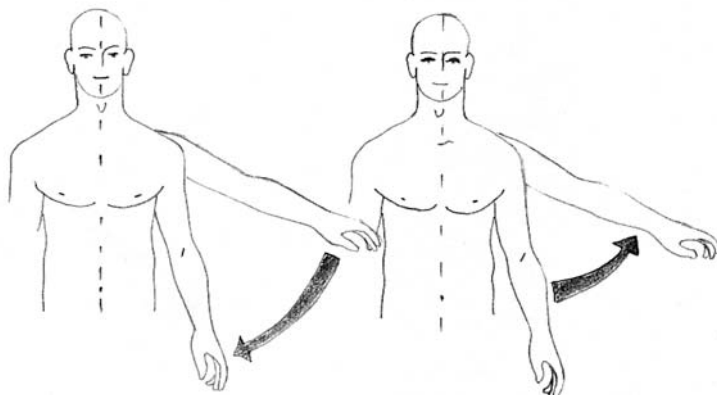
1. The prefix *ab-* means from or away from.  
 Abnormal means \_\_\_\_\_ normal.
2. The prefix *ab-* means \_\_\_\_\_.
3. *Ab/errant* uses the prefix *ab-* before the English word for wandering. What do you think the term *ab/errant* means? \_\_\_\_\_
4. *Ab/errant* is used in medicine to describe a structure that wanders from the normal. When some nerve fibers follow an unusual route, they form an \_\_\_\_\_ / \_\_\_\_\_ nerve.

away from

from or away from

wandering from (the normal course of events)

ab/errant  
 aberrant  
 ab er' ant



**Figure 3.1** Adduction/Abduction

5.  
aberrant Aberrant nerves wander from the normal nerve track. Blood vessels that follow an unusual path are called \_\_\_\_\_ vessels.
6.  
ab/duction Ab/duct/ion means movement away from a midline. When  
abduction the arm is raised from the side of the body,  
ab duk' shun \_\_\_\_\_ / \_\_\_\_\_ has occurred.  
away from / movement  
(midline)
7.  
abducted When children have been kidnapped and taken from their parents, they have been \_\_\_\_\_.
8.  
abducted Abduction can occur from any midline. When the fingers of the hand are spread apart, four fingers have been \_\_\_\_\_ from the midline of the hand.
9.  
ad/duction On the other hand, *ad-* is a prefix meaning toward. Movement  
adduction toward a midline is \_\_\_\_\_ / \_\_\_\_\_.  
ad duk' shun
10.  
ab- The prefix meaning from or away from is \_\_\_\_\_. The prefix  
ad- meaning toward, or toward the midline, is \_\_\_\_\_.
11.  
ad/hesion When two normally separate tissues join together, they adhere to each other like adhesive tape. Underline the part of the word that means sticking or joining: ad/hesion.
12.  
ad/hesion Several years ago patients did not walk quickly after surgery, which  
adhesion sometimes resulted in abnormal joining of tissues to each other as  
ad hē' zhun an adverse effect. Write the word that means the abnormal joining and healing together of tissues: \_\_\_\_\_ / \_\_\_\_\_.
13.  
adhesions Now patients walk the day following an appendectomy. This has nearly eliminated \_\_\_\_\_.

14.  
Here's a quick review exercise.

Complete the following:

away from  
toward

The prefix ab- means \_\_\_\_\_ the midline.

The prefix ad- means \_\_\_\_\_ the midline.

movement away from  
the midline  
sticking or joining  
together  
a structure that wanders  
from the normal  
a condition away from  
normal  
movement toward a  
midline

In your own words, explain the meaning of the following terms:

abduction \_\_\_\_\_

adhesion \_\_\_\_\_

aberrant \_\_\_\_\_

abnormal \_\_\_\_\_

adduction \_\_\_\_\_

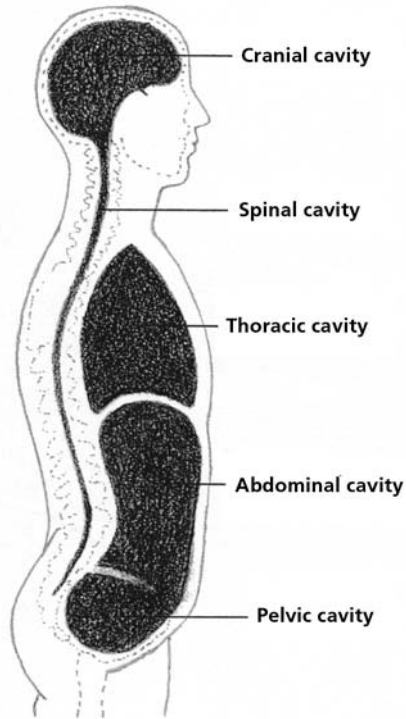


Figure 3.2 The Great Cavities

The great cavities are closed cavities not open to the outside of the body. Many of the body organs are suspended in these internal chambers and provide cushions against shocks. The cavities allow body organs to assume various sizes and shapes. The *cranial cavity* and *spinal cavity* are continuous and house the brain and spinal cord. The *thoracic cavity* contains the lungs and major blood vessels and other structures. The *abdominal cavity* is where the stomach, liver, spleen, and intestines are found. The lower portion of the abdominal cavity is set apart as the *pelvic cavity*. Here's where the female reproductive organs, urinary bladder, and male ducts may be found.

cranium (crani/o)	thorax (thorac/o)
abdomen (abdomino/o)	pelvis (pelv/i)

Refer to Figure 3.2 to help you complete many of the following frames.

15.

belly, abdominal  
cavity, or abdomen  
ab dō' men  
of or pertaining to  
the abdomen, or  
abdominal cavity

*Abdomin/o* is used to form words about the abdominal cavity or belly. When you see *abdomin/o* in a word, you think of the \_\_\_\_\_.

*Abdomin/al* is an adjective that means \_\_\_\_\_.

16.

abdomin/o/centesis  
abdominocentesis  
ab dom' i nō sen tē' sis

*Abdomin/o/centesis* means puncturing the abdominal cavity to remove fluid. This is a surgical puncture of a cavity. The word for surgical puncture of the abdominal cavity is \_\_\_\_\_.

abdomen	/	_____	/	_____	/	_____
abdomen						puncture of a cavity

17.

abdominocentesis

*Centesis*, or surgical puncture of a cavity, is a word in itself. Build a term meaning surgical puncture or tapping of the abdomen:

\_\_\_\_\_.

18.

abdominocentesis

When fluid has accumulated in the abdominal cavity, it can be drained off by a procedure called \_\_\_\_\_.

19.

cardi/o/centesis  
cardiocentesis  
kär' dē ō sen tē' sis

Try this. The word for surgical puncture of a heart chamber is

_____	/	_____	/	_____
heart				puncture of a cavity

20.  
 Abdomin/o/cyst/ic means pertaining to the abdomen and urinary bladder. The word root for bladder is \_\_\_\_\_.

cyst

bladder

Cyst/o is used to form terms that refer to the \_\_\_\_\_.

cyst/o

To refer to the urinary bladder or any sac containing fluid, use some form of \_\_\_\_\_ / \_\_\_\_\_.

21.

The word for temporary incision into a bladder is \_\_\_\_\_ / \_\_\_\_\_.

bladder                      incision into (temporary)

cyst/otomy

cystotomy

Inflammation of a bladder is \_\_\_\_\_.

cyst/itis

cystitis

The word for surgical removal of a bladder is \_\_\_\_\_.

cyst/ectomy

cystectomy

22.

Chances are good that by now you have figured out how word parts go together to create meaning. But let's review a simple rule and some examples.

Rule: About 90 percent of the time, the meaning of a term can be unscrambled by identifying its component parts in reverse.

For example,

*cyst* means bladder;  
*-itis* means inflammation of.

inflammation of the bladder

Therefore, cystitis means \_\_\_\_\_.

*Dermat* means skin;  
*-ologist* means a specialist (one who studies).

one who studies the skin, or a skin specialist

Therefore, dermatologist means \_\_\_\_\_.

*Abdomino* means abdomen;  
*-centesis* means surgical puncture of a cavity (to drain off fluid).

puncture of the abdominal cavity (to drain fluid)

Therefore, abdominocentesis means \_\_\_\_\_.

\_\_\_\_\_.



23. Take a look at Figure 3.2.  
 The bony cage that forms the chest cavity is called the *thorax*. What does abdomin/o/thorac/ic mean? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
- pertaining to the abdomen and thorax (bony cage forming the chest cavity)
24. A word that means, literally, pertaining to the abdomen and chest cavity is \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.  
 abdomen thorax pertaining to
- abdomin/o/thorac/ic  
 abdominothoracic  
 ab dom' ə nō thō rā' sik
25. *Thorac/o* forms words about the thorax, or chest cavity. A word that means pertaining to the chest cavity is \_\_\_\_\_ / \_\_\_\_\_.  
 thorax pertaining to
- thorac/ic  
 thoracic  
 thō rā' sik
26. Write a term meaning incision into the chest cavity:  
 \_\_\_\_\_ / \_\_\_\_\_.
- thorac/otomy  
 thoracotomy  
 thōr ə kot' ə mē
27. Write a term meaning surgical puncturing of the chest cavity to remove fluids: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.  
 thorax puncture of
- thorac/o/centesis  
 thoracocentesis  
 thōr' ə kō sen tē' sis
28. A word for the surgical repair of the chest cage is \_\_\_\_\_ / \_\_\_\_\_ / plast / y.
- thorac/o/plast/y  
 thoracoplasty  
 thōr' ə kō plas' tē
29. Now write a word for surgical repair of a bladder:  
 \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.
- cyst/o/plast/y  
 cystoplasty  
 sis' tō plas' tē
30. A hydro/cyst is a sac (or bladder) filled with watery fluid. *Hydro* is used in words to mean \_\_\_\_\_  
 \_\_\_\_\_.
- water, fluid, or a watery fluid

the cranial cavity 31.  
Go back to Figure 3.2. The space inside the head is called \_\_\_\_\_.

head, including  
cranium and facial  
bones Cranium means skull. Cephal/o is the combining form  
meaning \_\_\_\_\_.

of or pertaining to  
the head Therefore, cephalic means \_\_\_\_\_.

cranial cavity 32.  
An increased amount of fluid in the head is called hydro/cephal/us.  
Both the fluid and the brain occupy the same space, called the \_\_\_\_\_.

hydro/cephal/us  
hydrocephalus  
hī' drō sə fāl' us 33.  
A disease characterized by an enlarged head due to an increased  
amount of fluid in the cranial cavity is called  
\_\_\_\_\_ / \_\_\_\_\_ / us.  
water head

hydrocephalus 34.  
Unless resolved, accumulation of watery fluid in the cranial cavity  
results in deformity of the skull, and brain damage may occur. This  
condition is called \_\_\_\_\_.

abnormal fear 35.  
Hydro/phob/ia means having an abnormal fear of water. *Phobia*  
means \_\_\_\_\_.

hydro/phob/ia  
hydrophobia  
hī drō fō' bē ə 36.  
An abnormal fear of water is  
\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.  
water abnormal fear

hydro/therapy  
hydrotherapy  
hī' drō ther' ə pē 37.  
*Therapy* means treatment. Treatment by means of water is  
\_\_\_\_\_ / \_\_\_\_\_.  
water treatment

hydrotherapy Swirling water baths are a form of \_\_\_\_\_.

38.

See Figure 3.2 again. The bones of the pelvis form the pelvic cavity. A physician measures the size of a woman's pelvic cavity after she becomes pregnant. This procedure is called pelvi/metr/y.

pelvi

The word root for pelvic cavity is \_\_\_\_\_.

metr

The root for measurement is \_\_\_\_\_.

-y

The ending meaning a procedure is \_\_\_\_\_.

39.

To determine whether a woman has a pelvis large enough to avoid trouble during labor, a physician can measure the size of the pelvic cavity. This measurement is called \_\_\_\_\_.

pelvimetry  
pel vim' ə trē

40.

What do you think a pelvimeter is? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

a measuring device  
used for pelvimetry  
(or equivalent)

41.

When a physician measures the patient's pelvic cavity, the doctor is making a measurement called \_\_\_\_\_.

pelvimetry  
pelvimeter  
pel vim' ə trē

The instrument used is a \_\_\_\_\_.

42.

Crani/o is used in terms referring to the cranial cavity or crani/um, or skull. Crani/o/plast/y means \_\_\_\_\_  
\_\_\_\_\_.

surgical repair of the  
skull or cranium

43.

Write a medical term for each of the following:

a surgical procedure to excise part of the cranium

\_\_\_\_\_ / \_\_\_\_\_  
skull / excision of

incision into the skull

\_\_\_\_\_ / \_\_\_\_\_  
cranium / incision into

crani/ectomy  
craniectomy  
krā nē ek' tō mē  
crani/otomy  
craniotomy  
krā nē ot' ō mē

crani/o/meter  
craniometer

an instrument to measure the cranium

\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

of, or pertaining to, the brain and skull (cranium) 44.  
 The cerebrum occupies the cranial cavity. Thinking occurs in the cerebrum (cerebr/o). What is the meaning of crani/o/cerebr/al?  
 \_\_\_\_\_  
 \_\_\_\_\_

cerebrum 45.  
 Have you ever been told to use your “gray matter”? Gray matter controls thinking, feeling, and movement. The gray matter is the largest part of the brain. What is it called? \_\_\_\_\_  
cranium or cerebrum

cerebr/al  
 cerebral  
 ser ē' brəl 46.  
 Write a term meaning of, or pertaining to, the gray matter of the brain: \_\_\_\_\_ / \_\_\_\_\_.  
cerebrum pertaining to

spin/al  
 spinal  
 spī' nəl 47.  
 Cerebr/o/spin/al refers to the brain and spinal cord. What part of the word means pertaining to the spinal cord?  
 \_\_\_\_\_ / \_\_\_\_\_

cerebr/o/spin/al  
 cerebrospinal  
 ser ē brō spī' nəl 48.  
 A puncture or tap to remove fluid from the space around the cerebrum and spinal cord is called a spinal tap or \_\_\_\_\_ puncture.  
cerebrum / \_\_\_\_\_ / spinal / pertaining to

49.  
 Here's a quick review exercise.

**SUGGESTED ANSWERS:**

- |              |                        |
|--------------|------------------------|
| head         | pelvis                 |
| bladder, sac | bony vault, skull      |
| abdomen      | chest cavity, rib cage |
| measurement  | water, fluid           |

Using the suggested answers (only if you must), write the meaning of each of the following:

pelvis, pelvic cavity	pelv/i _____
water, fluid	hydro- _____
bladder, sac	cyst/o _____
head	cephal/o _____

measurement, meter	metr/o _____
bony chest cage, thorax	thorac/o _____
bony vault (brain), skull	crani/o _____
abdomen, abdominal cavity	abdomin/o _____

50.  
Try that again.

**SUGGESTED ANSWERS:**

-therapy	-otomy
-plasty	-metry
-ectomy	-centesis

Some suggestions:  
(Yours may be different.)

Add a prefix or ending to each of the following combining forms and then explain the meaning of the term you created.

craniotomy	crani/o _____
pelvimetry	pelv/i _____
thoracoplasty	thorac/o _____
abdominocentesis	abdomin/o _____
cystectomy	cyst/o _____
hydrotherapy	hydro- _____

51.  
Let's try something different. Coccus is a bacteria that causes disease. Cocc/i is the plural of cocc/us. When building terms about a whole family of bacteria called the cocci, we use the word root \_\_\_\_\_.

cocc-

(See Appendix B for more information on the formation of plurals.)

52.  
Pneumonia is caused by the pneumococcus. From this term you know that the germ responsible for pneumonia belongs to the family of bacteria called \_\_\_\_\_ / \_\_\_\_\_ (plural).

cocc/i  
kok' sē

53.

There are three main types of a coccus bacteria:

cocci growing in pairs are

dipl/o/cocc/i

dipl / o / \_\_\_\_\_ / \_\_\_\_\_,

cocci growing in twisted chains are

strept/o/cocc/i

strept / o / \_\_\_\_\_ / \_\_\_\_\_,

cocci growing in clusters are

staphyl/o/cocc/i

staphyl / o / \_\_\_\_\_ / \_\_\_\_\_.

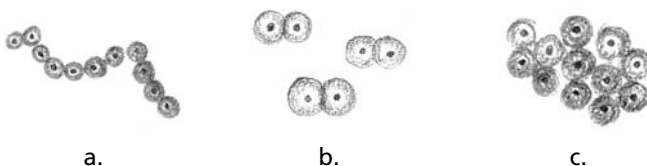


Figure 3.3 Cocci Bacteria

(a. strept) (b. diplo) (c. staphyl)

Bacteria (pl.) of the coccus family are round or spheroidal shaped single-cell micro-organisms. Many types of cocci (pl.) exist and cause illness and infection in humans.

54.

Refer to the illustration above for help. If you see a twisted chain of cocci when examining a slide under a microscope, you would say they were \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.

strept/o/cocc/i  
strep' tō kok sē

55.

*Staphyle* is the Greek word for bunch of grapes. If you should see a cluster of cocci when using a microscope, you would say they were \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.

staphyl/o/cocc/i  
staphylococci  
staf' i lō kok' sī

56.

The bacteria that cause carbuncles grow in clusters like bunches of grapes. Carbuncles are caused by \_\_\_\_\_ bacteria.

staphylococci

57. pertaining to producing pus  
Py/o is used for words involving pus. Genesis (gen/o) is from a Greek word meaning produce or originate. Py/o/gen/ic means \_\_\_\_\_.
58. py/o/gen/ic pyogenic  
Staphylococci produce pus; therefore, these cocci are \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ bacteria.  
pus producing
59. pyogenic  
Bacteria that contain or produce pus are referred to as \_\_\_\_\_ bacteria.
60. pyogenic  
Boils are purulent (contain pus). This pus is formed by \_\_\_\_\_ bacteria.  
pus-producing
61. discharge of pus  
The suffix *-orrhoea* means flow or discharge. Py/orrhoea means \_\_\_\_\_.
62. py/orrhoea pyorrhoea pī ō rē' ə  
The suffix *-orrhoea* refers to any flow or discharge. A flow of pus is called \_\_\_\_\_ / \_\_\_\_\_.  
pus discharge
63. pyorrhoea  
Pyorrhoea alveolaris is a disease of the teeth and gums. The term that tells you pus is being discharged is \_\_\_\_\_.
64. pyorrhoea  
When pus flows from the salivary gland, the disease is called \_\_\_\_\_ salivaris (of the salivary gland).
65. ear  
Ot/orrhoea means a discharging ear; *ot-* is the word root for \_\_\_\_\_.
66. ot/orrhoea otorrhoea ō tō rē' ə  
Ot/orrhoea is both a symptom and a disease. No matter which is meant, the word to use is \_\_\_\_\_ / \_\_\_\_\_.  
ear discharge

67.  
 inflammation of the  
 (middle) ear  
 Otorrhea may be a sign of ot/itis media (middle). Ot/itis media means \_\_\_\_\_.
68.  
 ot/algia  
 otalgia  
 This disease involves discharge, inflammation, pain, and deafness. What's the term for discharge from the ear? \_\_\_\_\_  
 \_\_\_\_\_ / \_\_\_\_\_.  
ear pain
69.  
 otalgia  
 ō tal' jē ə  
 Small children often complain of an earache. The medical term for pain in the ear is \_\_\_\_\_.
70.  
 nose  
 Rhinorrhea means discharge from the nose. *Rhin/o* is used in terms about the \_\_\_\_\_.
71.  
 rhin/itis  
 rhinitis  
 rī nī' tis  
 Taking what is necessary from rhin/o, form a term meaning inflammation of the nose: \_\_\_\_\_ / \_\_\_\_\_.
72.  
 rhin/orrhoea  
 rhinorrhoea  
 When your head cold is accompanied by a "runny nose" the medical term for the symptom is \_\_\_\_\_ / \_\_\_\_\_.  
nose discharge
73.  
 rhinorrhoea  
 Irritated or diseased sinuses in the head and face may discharge fluid through the nose. This is a form of \_\_\_\_\_.
74.  
 rhin/o/plasty  
 rhinoplasty  
 Build a term that means surgical repair of the nose:  
 \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.
- rhin/otomy  
 rhinotomy  
 Form a word that means incision into the nose:  
 \_\_\_\_\_ / \_\_\_\_\_.



75.

Try these for a quick review.

SUGGESTED ANSWERS:

twisted, chainlike	double, paired
family of bacteria	producing, originating
pus	grapelike cluster
ear	nose

Using the suggestions above (only if you must), write the meaning of each of the following:

family of bacteria	cocc/us, cocc/i _____
grapelike cluster	staphyl/o _____
pus	py/o _____
nose	rhin/o _____
double, paired	dipl/o _____
ear	ot/o _____
twisted, chainlike	strept/o _____
producing, originating	gen/o _____

76.

Try again. Here are some word parts and combining forms to help you build some familiar medical terms.

rhin/o	cocc/i
ot/o	py/o
-plasty	-orrhoea
staphyl/o	gen/o
-algia	dipl/o

Put together a medical term that best defines each of the following descriptions:

diplococci	A family of coccus bacteria found growing in pairs _____
pyogenic	Pertaining to producing pus, or pus-forming _____
rhinorrhoea	A runny discharge from the nose _____
otalgia	Pain in the ear, earache _____
staphylococci	Bacteria of the coccus family growing in grapelike clusters _____
rhinoplasty	Surgical repair (reconstruction) of the nose _____

77.  
calculus or stone A rhin/o/lith is a calculus or stone in the nose. *Lith/o* is the combining form for \_\_\_\_\_.
78.  
calculi (plural of calculus) or stones Lithogenesis means producing or forming \_\_\_\_\_.
79.  
lith/otomy Taking what is necessary from lith/o, build a word meaning an incision for the removal of a stone:  
lithotomy \_\_\_\_\_ / \_\_\_\_\_.  
lith ot'ə mē stone incision into (for)
80.  
gall or bile Calculi or stones form in many places in the body. A chol/e/lith is a gallstone. Chole is the word for \_\_\_\_\_.
81.  
chole/lith One cause of gallbladder disease is the presence of a gallstone or  
cholelith \_\_\_\_\_ / \_\_\_\_\_.  
gall stone
82.  
cholelith No matter what its size or shape, irritation and blockage of the gallbladder can be caused by a bile or gallstone, called \_\_\_\_\_.
83.  
gallbladder Gall is the fluid stored in the gallbladder. Cholecyst is a medical name for the \_\_\_\_\_.
84.  
chole/cyst/itis When gallstones cause inflammation of the gallbladder, this condition is called  
cholecystitis \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.  
kō' lē sis tī' tis gall bladder inflammation
85.  
cholecystitis Inflammation of the gallbladder is accompanied by pain and emesis. The condition is called \_\_\_\_\_.
86.  
cholecystitis Fatty foods like butter, cream, and whole milk contain fat and can exacerbate inflammation in the gallbladder. These foods should be avoided by patients with an inflammatory condition of the gallbladder, or \_\_\_\_\_.

chole/cyst/otomy  
 cholecystotomy  
 kō lē sis tot' e mē  
 or  
 chole/lith/otomy  
 cholelithotomy  
 kō' lē lith ot' ə mē

87.  
 When a cholelith causes cholecystitis, one of two surgical procedures may solve the problem. One is an incision into the gallbladder to remove stones, called a \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
gall stone incision into  
 or \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
gall stone incision into

chole/cyst/ectomy  
 cholecystectomy  
 kō' lē sis tek' tō mē

88.  
 More often, the presence of a gallstone calls for excision of the gallbladder, called \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
gall bladder surgical removal

89.  
 It's time to review. From List B select the best meaning for each term in List A. Write your choice in the space provided.

pelvis  
 stone, calculus  
 gall, bile  
 pus  
 skull  
 head  
 measure  
 nose  
 ear  
 chainlike  
 grapelike  
 double  
 chest  
 bladder, sac  
 abdomen

LIST A  
 pelv/i \_\_\_\_\_  
 lith/o \_\_\_\_\_  
 chol/e \_\_\_\_\_  
 py/o \_\_\_\_\_  
 crani/o \_\_\_\_\_  
 cephal/o \_\_\_\_\_  
 metr/o \_\_\_\_\_  
 rhin/o \_\_\_\_\_  
 ot/o \_\_\_\_\_  
 strept/o \_\_\_\_\_  
 staphyl/o \_\_\_\_\_  
 dipl/o \_\_\_\_\_  
 thorac/o \_\_\_\_\_  
 cyst/o \_\_\_\_\_  
 abdomin/o \_\_\_\_\_

LIST B  
 measure  
 skull  
 pus  
 pelvis  
 head  
 gall, bile  
 stone, calculus  
 chainlike  
 double, pairs  
 chest, thorax  
 bladder, sac  
 nose  
 abdomen  
 grapelike  
 ear

away from  
 toward  
 watery fluid, water

90.  
 Complete the following:  
 The prefix ab- means \_\_\_\_\_ the midline.  
 The prefix ad- means \_\_\_\_\_ the midline.  
 The prefix hydro- means \_\_\_\_\_.

91.

Select the best meaning for each of the following word parts.

treatment	therapy _____	surgical puncture
calculus, stone	lith _____	abnormal fear
discharge, flow	orrhoea _____	calculus, stone
surgical puncture	centesis _____	treatment
abnormal fear	phobia _____	discharge, flow

92.

Each of the suffixes below means *of*, or *pertaining to* the word root to which it is attached. Write the meaning of each term.

	SUFFIXES	EXAMPLE	MEANING
of or pertaining to the duodenum	-al	duoden/al	_____
pertaining to the stomach	-ic	gastr/ic	_____
pertaining to the lumbar area (of the spine)	-ar	lumb/ar	_____
pertaining to the heart	-ac	cardi/ac	_____

93.

Here are 40 new medical terms you formed in Chapter 3. Read them one at a time and pronounce each aloud. Better yet, ask a friend to say them aloud and you spell them.

aberrant (ab er' ant)	craniotomy (krā nē ot' ō mē)
abdominal (ab dom' i nəl)	cranium (krā' nē um)
abdominocentesis (ab dom' i nō sen tē' sis)	cystitis (sis tī' tis)
abduction (ab duk' shun)	cystocele (sis' to sēl)
adduction (ad duk' shun)	cystotomy (sis tot' ə mē)
cardiocentesis (kār' dē ō sen tē' sis)	diplococci (dip' lō kok' sī)
cephalic (cə fal' ik)	hydrocephalus (hī' drō sə fal' us)
cholecystectomy (kō' lē sis tek' tō mē)	hydrophobia (hī' drō fō' bē ə)
cholecystitis (kō' lē sis tī' tis)	hydrotherapy (hī' drō ther' ə pē)
cholelithotomy (kō' lē lith ot' ə mē)	lithogenesis (lith' ō jen' ə sis)
craniectomy (krā nē ek' tō mē)	lithotomy (lith ot' ō mē)
cranioplasty (krā' nē ō plas' tē)	otalgia (ō tal' jē a)
	otitis (ō tī' tis)
	otorrhea (ō tō rē' ə)
	pelvic (pel' vik)
	pelvimetry (pel vim' ə trē)

pyogenic (pī ō jen' ik)	streptococci (strep' tō kok' sī)
pyorrhea (pī ō rē' ə)	thoracic (thō rā' sik)
rhinitis (rī nī' tis)	thoracocentesis
rhinolith (rī' nō lith)	(thōr' ə kō sen tē' sis)
rhinoplasty (rī' nō plas tē)	thoracoplasty (thōr' ə kō plas' tē)
rhinorrhea (rī nōr rē' ə)	thoracotomy (thōr ə kot' ə mē)
staphylococci (staf' i lō kok' sī)	

Take the Chapter 3 Self-Test before going on.

## Chapter 3 Self-Test

### Part 1

From the list on the right, select the correct meaning for each of the following terms. Write the letter in the space provided.

- |                          |  |
|--------------------------|--|
| _____ 1. Thoracocentesis | a. Headache  |
| _____ 2. Cholelithotomy  | b. Relating to the pelvis, pelvic cavity                           |
| _____ 3. Otorrhea        | c. Wandering or out of the normal place                            |
| _____ 4. Cystotomy       | d. Tapping or puncturing the chest cavity (thorax) to remove fluid |
| _____ 5. Abdominalgia    | e. Movement toward the midline                                     |
| _____ 6. Cranium         | f. Abnormal fear of water  |
| _____ 7. Cephalgia       | g. Running or draining from the ear                                |
| _____ 8. Hydrophobia     | h. Incision into the bladder                                       |
| _____ 9. Adduction       | i. Producing pus   |
| _____ 10. Streptococci   | j. The bony vault surrounding the brain                            |
| _____ 11. Pyogenic       | k. Incision for the purpose of removing a gallstone                |
| _____ 12. Aberrant       | l. Commonly referred to as a “belly-ache”                          |
| _____ 13. Pelvic         | m. Cocci bacteria that grow in chains                              |
| _____ 14. Cholecystotomy | n. Surgical repair or restoration of the nose                      |
| _____ 15. Rhinoplasty    | o. Incision into the gallbladder                                   |

**Part 2**

Complete each of the medical terms on the right with the appropriate word root:

- |  |                |
|--|----------------|
| 1. Herniation of a bladder                                   | _____ cele     |
| 2. Tapping or puncturing of the heart chamber                | _____ centesis |
| 3. Surgical repair of the bony vault that encloses the brain | _____ plasty   |
| 4. Earache   | _____ algia    |
| 5. Gallstone   | _____ lith     |
| 6. Inflammation of the nose                                  | _____ itis     |
| 7. Measurement of the pelvis                                 | _____ metry    |
| 8. Relating to the thorax                                    | _____ ic       |
| 9. Collection of fluid in the head                           | Hydro _____    |
| 10. Incision into the cranium                                | _____ otomy    |
| 11. Relating to the formation of pus                         | _____ genic    |
| 12. Surgical repair of the chest cage                        | _____ plasty   |
| 13. Instrument for measuring the pelvis                      | _____ meter    |
| 14. Relating to the abdomen                                  | _____ al       |
| 15. Surgical removal of the gallbladder                      | _____          |

**ANSWERS**

**Part 1**

1. d
2. k
3. g
4. h
5. l
6. j
7. a
8. f
9. e

**Part 2**

1. Cystocele
2. Cardiocentesis
3. Cranioplasty
4. Otagia
5. Cholelith
6. Rhinitis
7. Pelvimetry
8. Thoracic
9. Hydrocephalus

- |       |                     |
|-------|---------------------|
| 10. m | 10. Craniotomy      |
| 11. i | 11. Pyogenic        |
| 12. c | 12. Thoracoplasty   |
| 13. b | 13. Pelvimeter      |
| 14. o | 14. Abdominal       |
| 15. n | 15. Cholecystectomy |



# **4** The Genitals and the Urinary Tract

*Chapter 4 addresses the genitourinary system. As the name suggests, this system includes the genitals and the urinary system. This section of the head-to-toe assessment is documented differently depending on the sex of the client, and you will find many of the medical terms subdivided in the book. This section provides information on urinary patterns, obstructions (block-ages), and problems. This includes information about the bladder—the organ that stores urine—and the tubes that lead to and from the bladder to remove urine from the body. It also has information involving reproduction, fertility, and sexuality, and addresses any relevant problems that might arise. Review the mini-glossary below.*

*Chapter 4 is a little longer than the previous ones. Again, you'll be working with roots, prefixes, and suffixes. You'll make about 50 new medical terms and practice defining them. You'll work with anatomical terms and some medical conditions associated with these areas of the body. There are illustrations showing the anatomy of the urinary tract and the genital organs of both male and female. Make these illustrations work for you. Bookmark the pages and refer to them often. Move slowly. When you encounter a difficult example, go back a frame or two and work through it again. Help yourself understand before moving on.*

## **Mini-Glossary**

### **Root Words**

angi/o (vessel)

arteri/o (artery)

blast/o (embryo)

colp/o (vagina)

crypt/o (hidden)

fibr/o (fiber)

hem/o, hemat/o (blood)

hyster/o (uterus)

kinesi/o (motion)

lys/o (destruction)

men/o (*menses*)  
 my/o (*muscle*)  
 nephro/o (*kidney*)  
 neur/o (*nerve*)  
 o/o (*egg, ovum*)  
 oophoro/o (*ovary*)  
 orchid/o (*testes*)  
 peps/o, peps/ia (*digestion*)

pyel/o (*pelvis of the kidney*)  
 salping/o (*fallopian tube*)  
 scler/o (*tough, hard*)  
 spermat/o (*sperm*)  
 ureter/o (*ureter*)  
 urethr/o (*urethra*)  
 ur/o (*urine*)

**Prefixes**

a-, an- (*without*)  
 dys- (*pain*)

**Suffixes**

-blast (*embryonic*)  
 -y, -ia (*noun ending*)  
 -orrhagia (*hemorrhage*)  
 -orrhaphy (*suture*)  
 -pexy (*fixation*)  
 -ptosis (*drooping*)  
 -spasm (*twitching*)  
 -sperm (*sperm*)

Did you remember to complete the Chapter 3 Review Sheet before beginning this new unit? Practice, practice, practice. It really works (page 265).

1.  
*Kinesi* is used in words to mean movement or motion. *Kinesi/algia* means \_\_\_\_\_.

pain on movement or  
 movement pain

2.  
 When moving any sore or injured part of the body, pain occurs. Moving a broken arm can cause pain described as \_\_\_\_\_ / \_\_\_\_\_.

kinesi/algia  
 kinesi/algia  
 kin ē' sē al' jē ə

3.  
 After your first horseback ride, almost any movement causes a condition called \_\_\_\_\_.

kinesi/algia

- kinesi/ology  
kinesiology  
kin ē' sē ol' ə jē
4.  
The suffix *-ology* means study of. (Remember *-ologist*?) The study of muscular movements is \_\_\_\_\_ / \_\_\_\_\_.  
  movement  study of
- kinesiology
5.  
Kinesi/ology is the study of movement. The study of muscular movement during exercise is known as the scientific field of \_\_\_\_\_.
- kinesiology
6.  
The whole science of how the body moves is embraced in the field of \_\_\_\_\_.
- kinesiology
7.  
The prefix *dys-* means painful, bad, or difficult. *Dys/men/orrhœa* means painful menstruation. The prefix for painful, bad, or difficult is \_\_\_\_\_.
- dys-
8.  
*Pepsis* (*peps/o*) is the Greek word for digestion. *Dys/peps/ia* means \_\_\_\_\_.
- poor or painful digestion
9.  
Eating under tension may cause painful or poor digestion. This is called \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.
- dys/peps/ia  
dyspepsia  
dis pep' sē ə
10.  
Contemplating the troubles of the world while eating is a good way to cause \_\_\_\_\_.
- dyspepsia
11.  
Here's a quick review of what you just covered. From List B select the best meaning for each term in List A. Write your choice in the space provided.
- |  |                |                     |           |
|--|----------------|---------------------|-----------|
| <p>menses<br/>digestion<br/>movement<br/>painful<br/>without, absence of</p> | LIST A         |                     | LIST B    |
|  | men/o _____    |                     | digestion |
|  | peps/o _____   |                     | movement  |
|  | kinesi/o _____ |                     | menses    |
|  | dys- _____     |                     | painful   |
| a- _____   |                | without, absence of |           |

Refer to the table below to work through the next thirteen frames.

<b>Some Combining Forms</b>	
angi/o	vessel, blood & lymphatic
arteri/o	artery
fibr/o	fibrous, fiber
hem/o, hemat/o	blood
malac/o	soft, softened
lip/o	fat
my/o	muscle
neur/o	nerve or neuron
scler/o	hard

<b>Some Suffixes</b>	
-lysis	declining, dissolution
-spasm	twitch, twitching
-blast	germ or immature
-osis	condition of
-oma	tumor
-ia, -y	these endings make the term a noun

neur/o/blast  
neuroblast  
nyōō' ro blast

12.

An immature (germ) cell from which muscle tissue develops is a my/o/blast. A germ cell from which a nerve cell develops is a \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.

angi/o/blast  
angioblast  
an' jē ō blast

13.

A germ cell from which vessels develop is an \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.

my/o/spasm  
myospasm  
mī' ō spa zm

14.

A spasm of a nerve is a neur/o/spasm.

A spasm of a muscle is a  
\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.

angi/o/spasm  
angiospasm  
an' jē ō spa' zm

A spasm of a vessel is an  
\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.

angi/o/scler/osis  
angiosclerosis  
an' jē ō sklə rō' sis

15.

A (condition of) hardening of nerve tissue is neur/o/scler/osis. A hardening of a vessel is

\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.  
vessel                          hardening                          condition of



hem/angi/itis  
 hemangiitis  
 hē man' jē ī tis  
 hem/o/lysis  
 hemolysis  
 hē mol' ə sis  
 or another form is  
 hemat/o/lysis  
 hē mə tol' ə sis

21.  
*Hem/o* refers to blood. A tumor of a blood vessel is a hem/angi/oma. (Note the dropped o.) An inflammation of a blood vessel is

\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.

Breaking down or dissolution of blood cells is

\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.

hemat/o/logy  
 hematology  
 hē mə tol' ə jē  
 hemat/o/logist  
 hematologist  
 hē mə tol' ə jist

22.  
 Hemat/o also refers to blood. The study of blood is

\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.

One who specializes in the science of blood is a

\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.

23.  
 Let's go over the new material again briefly. Match the best definition in List B with the word root in List A. Write your selection in the space provided.

artery  
 fibrous connective tissue  
 blood  
 fat  
 soften  
 muscle  
 nerve  
 harden  
 blood and lymph vessel

LIST A  
 arteri/o \_\_\_\_\_  
 fibr/o \_\_\_\_\_  
 hem/o, hemat/o \_\_\_\_\_  
 lip/o \_\_\_\_\_  
 malac/o \_\_\_\_\_  
 my/o \_\_\_\_\_  
 neur/o \_\_\_\_\_  
 scler/o \_\_\_\_\_  
 angi/o \_\_\_\_\_

LIST B  
 fat  
 muscle  
 artery  
 blood and lymph vessel  
 soften  
 harden  
 fibrous connective tissue  
 blood  
 nerve

Now match the best definition in List B with the suffix in List A. Write the term.

destruction of  
 twitching  
 tumor  
 inflammation of  
 germ cell (immature)  
 condition of  
 science, or study of

LIST A  
 -lysis \_\_\_\_\_  
 -spasm \_\_\_\_\_  
 -oma \_\_\_\_\_  
 -itis \_\_\_\_\_  
 -blast \_\_\_\_\_  
 -osis \_\_\_\_\_  
 -ology \_\_\_\_\_

LIST B  
 tumor  
 science, or study of  
 condition of  
 twitching  
 inflammation of  
 destruction of, dissolution  
 germ cell (immature)

24.

Build a word for each of the following definitions.

arterio/scler/osis

a condition of hardening of the arteries

\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

hemat/oma

blood tumor \_\_\_\_\_ / \_\_\_\_\_

angio/spasm

blood vessel spasm \_\_\_\_\_ / \_\_\_\_\_

myo/fibr/oma

fibrous muscle tumor \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

or fibromyoma

neuro/blast

nerve tissue germ cell \_\_\_\_\_ / \_\_\_\_\_

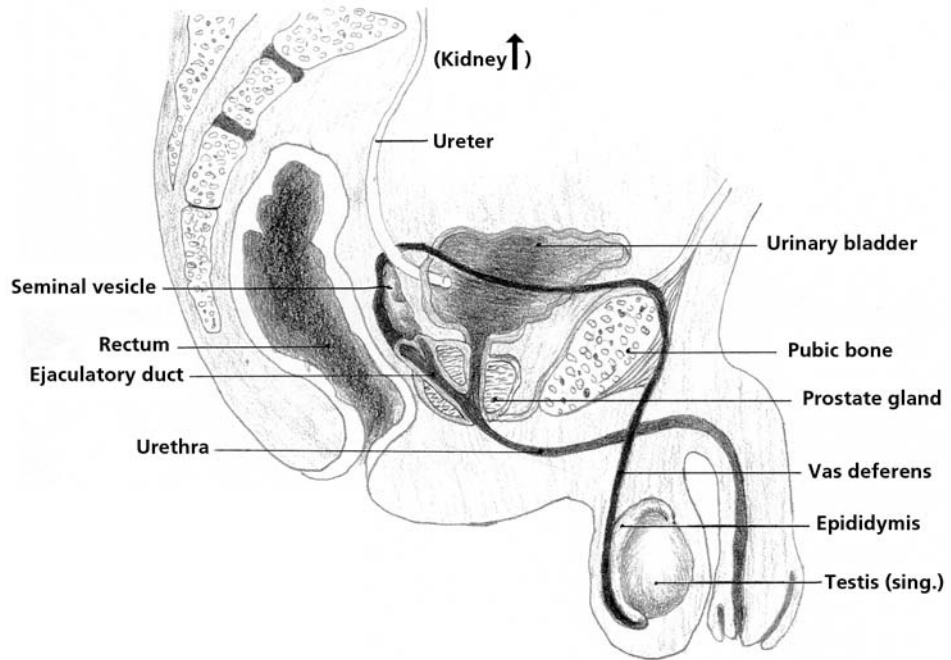
lipo/lysis

breakdown of fat tissue \_\_\_\_\_ / \_\_\_\_\_

dys/pepsia

poor or painful digestion \_\_\_\_\_ / \_\_\_\_\_

Take a break.



**Figure 4.1** The Male Reproductive Organs (Midline Section)

The primary function of the male reproductive system is to produce *sperm cells* and deliver them to the female reproductive system for fertilization of the egg cells. The major organs of the male reproductive system are the paired *testes*, where sperm cells are produced. Surrounding the testis is a comma-shaped structure called the *epididymis*. Mature sperm cells are stored in the epididymis. The *vas deferens* is a long tube that conveys the mature sperm for ejaculation during copulation. It courses from the epididymis up into the body, over the pubic bone, curves to the left, passes the *urinary bladder*, curves again near the *ureter*, and passes downward. Here the vas joins with the duct leading from the *seminal vesicle* and forms the *ejaculatory duct*. The seminal vesicle is a small bladderlike structure that adds secretions to the sperm to form semen. The ejaculatory duct releases the semen and it enters the *urethra* as it exits the urinary bladder. The urethra is a 6- to 8-inch long tube in the male. It passes by the *prostate*, a chestnut-shaped gland surrounding the beginning of the urethra, and enters the penis, to deliver its contents for fertilization of the female egg cell.

Several accessory structures in the diagram show their relationships to the reproductive organs. The ureter can be seen near the



urinary bladder. It delivers urine from the kidney. The last portion of the large intestine is the *rectum*, and the end of the digestive tract is the *anus*.

sperm or spermatazoon (spermat/o)	ureter (ureter/o)
testis (orchid/o)	urethra (urethr/o)
prostate (prostat-, prostat/o)	

Review Figure 4.1, then refer to it as you work through frames 25 through 36.

<p>25. testes (pl.) testis (sing.)</p>	<p>The testes are organs that manufacture sperm, the male germ cell; that is, spermatozoa (plural) are formed in the _____.</p>
--	---

<p>26. excision of a testicle, testis</p>	<p>Orchid/algia means pain in a testicle or testis. Orchid/ectomy means _____</p>
---	---

<p>27. orchid/itis orchiditis or ki dī' tis</p>	<p>Build a word meaning inflammation of a testicle _____ / _____</p>
---	--

<p>orchid/otomy orchidotomy or kid ot' ō mē</p>	<p>incision into a testis _____ / _____</p>
---	---

<p>28. crypt kript'</p>	<p>A crypt/ic remark is one with a hidden meaning. A crypt/ic belief is obscure. The word root for hidden or obscure is _____.</p>
---------------------------------	--

<p>29. crypt/orchid/ism cryptorchidism kript ôr' kid ism</p>	<p>Near the time of birth the testes of the fetus normally descend from the abdominal cavity into the scrotum. Sometimes this fails to happen, and the testes are not evident at birth. This condition of undescended testes is called _____ / _____ / <u>ism</u> . hidden testicle</p>
--	---

<p>30. cryptorchidism</p>	<p>When a testis is hidden in the abdominal cavity or is undescended, the condition is called _____.</p>
-------------------------------	--

orchid/o/(pexy)

31.  
An operation to repair cryptorchidism is called orchid/o/pexy.  
Circle the part of the term that means to fix in its place.

formation of  
spermatozoa, sperm,  
or male germ cells

32.  
*Sperma* is the Greek word meaning seed.  
Spermat/o is used in words about spermat/o/zoa or male germ  
cells (sperm). Spermat/o/genesis means \_\_\_\_\_  
\_\_\_\_\_.

spermat/o/lysis  
spermatolysis  
sperm' ə tol' i sis

33.  
*Blast-* means immature.  
*-lysis* means dissolution or destruction.  
Give a word meaning the destruction of spermatozoa:  
\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.

spermat/o/blast  
spermatoblast  
sper mat' ō blast

How about these:  
an immature male cell, germ cell, sperm  
\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

spermat/oid  
spermatoid  
sper' mä toid

resembling sperm \_\_\_\_\_ / \_\_\_\_\_

muscle  
vessel  
nerve

34.  
Summarize what you learned:  
my/o means \_\_\_\_\_.  
angi/o means \_\_\_\_\_.  
neur/o means \_\_\_\_\_.

twitching, spasm  
germ cell (immature)  
hard, hardened  
fibrous  
destruction of

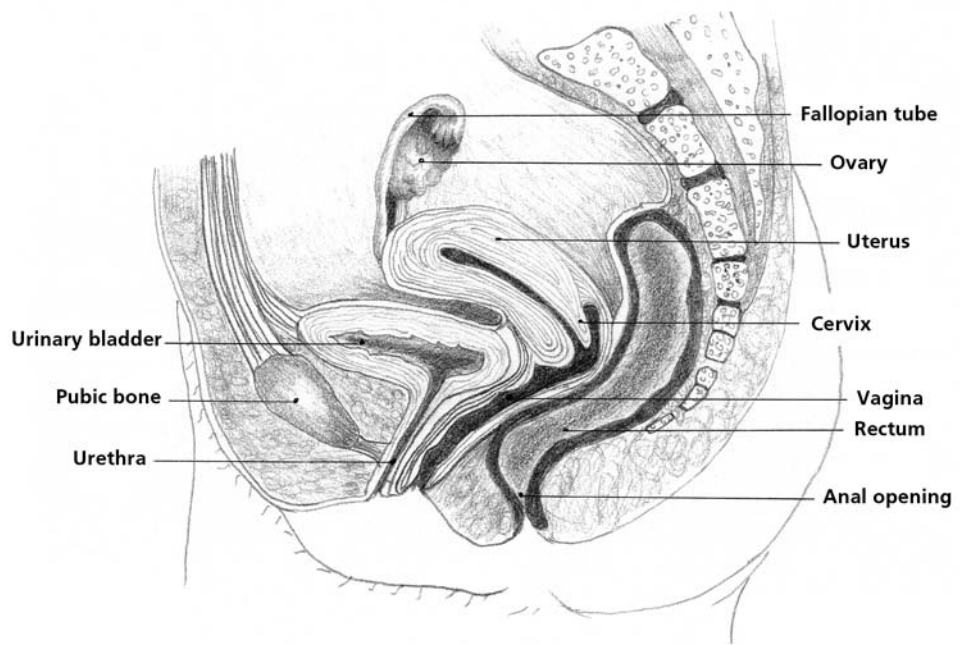
35.  
Again.  
spasm means \_\_\_\_\_.  
blast/o means \_\_\_\_\_.  
scler/o means \_\_\_\_\_.  
fibr/o means \_\_\_\_\_.  
lysis means \_\_\_\_\_.

36.  
And these.

spermatozoa (sperm)  
blood  
blood  
formation of, or  
origination

spermat/o means \_\_\_\_\_  
hemat/o means \_\_\_\_\_  
hem/o means \_\_\_\_\_  
genesis means \_\_\_\_\_

Correct any definitions you may have missed; then cover the word roots, read the definitions you have written, and write the appropriate word root in the right-hand margin.



**Figure 4.2** The Female Reproductive Organs (Midline Section)

The female reproductive system is responsible for producing female sex cells for potential union with male sperm cells. In addition, the female reproductive system nurtures the developing embryo and fetus for a nine-month period. The *ovaries* are the female reproductive organs in which egg cells are formed. An egg cell (*ovum*) is released into the *fallopian tube* and makes its way to the *uterus*. The uterus is a thick muscular organ that serves as a site for implantation of a fertilized ovum and nourishment of the embryo and fetus. A

long narrow internal space leads from the uterus through a narrow neck called the *cervix*. The cervix is closed and passable only to microscopic entities unless a woman is menstruating or in labor. The cervix opens into the vagina. The *vagina* is a tubular organ approximately four inches in length. It receives the semen from the penis and together with the cervix is the passageway to the uterus. It acts as a birth canal from the uterus to the outside for the newborn.

Other organs lie close to the female reproductive organs. Among these are the muscular *urinary bladder* and the *urethra*. The urethra is a short tube leading from the bladder that delivers urine to outside the body. The *rectum* is the last portion of the digestive organs and terminates at the *anus*.

ovary (oophor/o)	urinary bladder (cyst/o)
fallopian tube (salping/o)	urethra (urethr/o)
uterus (hyster/o)	vagina (colp/o)
ovum (o/o)	

Bookmark Figure 4.2 and refer to it as you work through frames 37 through 61.

37.

egg (a cell that will  
become an ovum)

The Greek word for egg is *oon*. In scientific words, o/o (pronounce both o's) means egg or ovum. An o/o/blast is an immature \_\_\_\_\_ cell.

38.

excision or surgical  
removal of the ovary

An ovum is discharged from the ovary. The combining form used in words referring to the ovary is *oophor/o*.

What does oophor/ectomy mean? \_\_\_\_\_

oophor/itis  
oophoritis  
ōō fôr ī' tis

39.

Using what you need from oophor/o, build a word that means inflammation of an ovary: \_\_\_\_\_ / \_\_\_\_\_.

oophor/ectomy  
oophorectomy  
ōō fôr ek' tō mē  
oophor/oma  
oophoroma  
ōō fôr ō' ma

40.

*Oophor-* is the root for ovary. Build a term for each of the following:

excision of an ovary \_\_\_\_\_ / \_\_\_\_\_

tumor of an ovary (ovarian tumor)  
\_\_\_\_\_ / \_\_\_\_\_

41.  
 Oophor/o/pexy means fixation of a displaced ovary. -Pexy is a suffix meaning \_\_\_\_\_.  
 fixation (of)
42.  
 When an ovary is displaced, a surgical procedure to fix it back in its normal place is called \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.  
 oophor/o/pexy  
 oophoropexy  
 ōō' fôr ô pek' sē
43.  
 The surgical procedure to correct the position of a prolapsed (dropped or sagging) ovary is called an \_\_\_\_\_.  
 oophoropexy
44.  
*Salping/o* is used to build terms that refer to the fallopian tube(s). A salpingoscope is an instrument used to examine the \_\_\_\_\_.  
 fallopian tube(s)
45.  
 Using what you need of salping/o, build a word meaning inflammation of a fallopian tube \_\_\_\_\_ / \_\_\_\_\_  
 salping/itis  
 salpingitis  
 sal pin jī' tis  
 excision of a fallopian tube  
 salping/ectomy  
 salpingectomy  
 sal pin jek' tō mē  
 a permanent opening into a fallopian tube  
 salping/ostomy  
 salpingostomy  
 sal pin gos' tō mē
46.  
 In words built from laryng/o, pharyng/o, and salping/o, the “g” is pronounced as a hard “g” when followed by an “o” or an “a.” The “g” in good is a hard “g.” For example, in laryngalgia and salpingocele, the “g” of the word root is pronounced hard as in \_\_\_\_\_  
 game and good  
 (pronounce them)  
 \_\_\_\_\_  
 (game/good) or (germ/giant)
47.  
 In laryngostomy, pharyngotomy, and salpingopexy, the “g” is followed by an “o” and is a \_\_\_\_\_ sound.  
 hard (pronounce them)  
 \_\_\_\_\_  
 (hard/soft)
48.  
 A hard “g” precedes the vowels \_\_\_\_\_ and \_\_\_\_\_.  
 “o” and “a”

germ and giant  
(pronounce them)

49.  
In words built from laryng/o, pharyng/o, and salping/o, the “g” is soft *when followed by an “e” or an “i”*; for example, in laryngectomy and salpingitis, the “g” is soft as in \_\_\_\_\_.  
(game/good) or (germ/giant)

soft (pronounce them)  
“e” and “i”

50.  
In salpingian, laryngitis, and pharyngectomy, the “g” is given a \_\_\_\_\_ sound because it precedes the vowels \_\_\_\_\_ and \_\_\_\_\_.  
(soft/hard)

laryngectomy  
lar in jek' tō mē  
pharyngalgia  
far ing gal' jē a  
pharyngitis  
far in jī' tis  
salpingo-oophorectomy  
sal pin' gō ōō fōr ek'  
tō mē

51.  
Pronounce each of the following terms.

laryngectomy      pharyngitis  
pharyngalgia      salpingo-oophorectomy

In each of the above terms circle the vowel that makes the “g” soft.

salping/o-/oophor/ itis  
salpingo-oophoritis  
sal' pin gō ōō fōr ī' tis

52.  
In compound medical words, if two like vowels occur between word roots, they are separated by a hyphen. Use salpingo-oophorectomy as a model and build a word that means inflammation of the fallopian tube and ovary:  
\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.

Use a hyphen between  
two like vowels when  
joining word roots.

53.  
Explain when a hyphen (-) is used in compound terms.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

inflammation of the  
vagina

54.  
*Colp/o* is used in words about the vagina. Colpitis means \_\_\_\_\_  
\_\_\_\_\_.

- vaginal spasm  
colp/otomy  
colpotomy  
kôl pot' ô mē
55.  
A colp/o/spasm is a \_\_\_\_\_.  
Incision into the vagina is a \_\_\_\_\_ / \_\_\_\_\_.
56.  
Build a word meaning
- colp/o/plasty (you pronounce)  
surgical repair of the vagina  
\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_
- colp/o/scope  
colposcope  
kôl' pō skōp  
instrument for examining and visually enlarging vagina  
\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_
57.  
uterus  
Hyster/o is used to build words about the uterus. A hyster/ectomy is an excision, or surgical removal, of the \_\_\_\_\_.
58.  
Write words for the following:
- hysterotomy  
an incision into the uterus \_\_\_\_\_
- hysterospasm  
a spasm of the uterus \_\_\_\_\_
- hysteropexy  
surgical fixation of the uterus \_\_\_\_\_
59.  
See Figure 4.2, The Female Reproductive Organs. Examination of the female genital system begins at the vulva (external genitalia), then the vagina, and on to the uterus, fallopian tubes, and ovaries.  
Follow the same order and build a word that means an operation to remove the uterus, fallopian tubes, and ovaries:  
\_\_\_\_\_.
60.  
Stop here and summarize what you've just covered. Match the best definition in List B with the word root in List A. Write your selection in the space provided.

	LIST A	LIST B
ovary	oophor/o _____	fallopian tubes
male germ cells	spermat/o _____	vagina
uterus	hyster/o _____	male germ cells
fallopian tubes	salping/o _____	egg, ovum
testicle	orchid/o _____	hidden
vagina	colp/o _____	testicle
egg, ovum	o/o _____	ovary
hidden	crypt _____	uterus
surgical fixation	-pexy _____	resembling
produce, originate	-genesis _____	twitching, spasm
resembling	-oid _____	suturing to repair
twitching, spasm	-spasm _____	produce, originate
germ cell, immature cell	-blast _____	germ cell, immature cell
suturing to repair	-orrhaphy _____	surgical fixation

61.

Build a word for each of the following:

colp/orrhaphy	suturing (to repair) the vagina _____ / _____
hystero/spasm	spasm of the uterus _____ / _____
orchido/pexy	fixation of the testis _____ / _____
salpingo/oophor/itis	inflammation of ovary and fallopian tube _____ / _____ / _____
spermato/genesis	formation of spermatozoa _____ / _____
spermato/blast	(immature) male germ cell _____ / _____

62.

Now let's have some fun. Read each term and its meaning. Then study the accompanying illustrations.

*Hernia* is the protrusion of an organ, or part of an organ, through the wall of the cavity that normally contains it; a rupture.

*Ptos* is the sinking down or sagging of an organ or part (from its normal position).

*Anomaly* is an irregularity. It is an organ or structure that is abnormal or contrary to the general rule.



*Aneurysm* is a localized abnormal dilation of a blood vessel, or ballooning out of the vessel at a weak point.

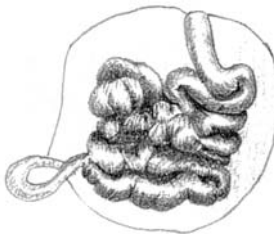
Write the correct term below each illustration:



A. \_\_\_\_\_



B. \_\_\_\_\_



C. \_\_\_\_\_



D. \_\_\_\_\_

- A. anomaly
- B. aneurysm
- C. hernia
- D. ptosis

Figure 4.3

63.

Hyster/o/ptosis means prolapse (sagging) or sinking down of the uterus. Ptosis (pronounced tō' sis) is a word that means \_\_\_\_\_  
sinking down, prolapse, or sagging

64.

Upon examination, a physician may find that a patient's uterus has prolapsed or moved lower in the pelvic region. The medical term describing this condition is \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
hyster/o/ptosis

When uterine prolapse occurs, a surgeon may surgically replace the uterus to its normal position. A hysteropexy would be done to correct or repair the condition known as \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
hyster/o/ptosis  
hysteroptosis  
his' ter op tō' sis

65.

From the terms provided, select one that best fits each definition.

anomaly    hernia    aneurysm    ptosis

hernia

Protrusion of an organ or part through the wall of the cavity in which it is normally enclosed. \_\_\_\_\_

ptosis

The prolapse, or sagging, of an organ or part from its normal position. \_\_\_\_\_

aneurysm

The abnormal ballooning out of a blood vessel at a weak point. \_\_\_\_\_

anomaly

Irregularity in structure of an organ or part; the structure is contrary to the general rule. \_\_\_\_\_

66.

Fill in the missing words to complete each of the following definitions.

normal

Ptosis is the sagging of an organ or part from its \_\_\_\_\_ position.

wall

Hernia is the protrusion of an organ or part through the \_\_\_\_\_ of a cavity that normally contains it.

rule

Anomaly is an irregularity. It is an organ or structure that is contrary to the \_\_\_\_\_.

blood vessel

Aneurysm is the abnormal ballooning out at a weak point in a \_\_\_\_\_.

67.

Complete each of the following descriptions by writing the form of the term that fits best.

anomalous (adjective)  
an anomaly (noun)

An irregular organ or structure that is contrary to the general rule is said to be \_\_\_\_\_.

herniated (verb)

When an organ or part protrudes through the wall of the cavity that normally contains it, we say it has \_\_\_\_\_.

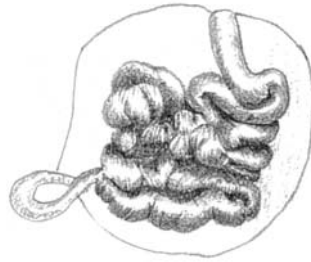
aneurysm (noun)

When a weak spot in the wall of the aorta (artery) balloons out, we call it an aortic \_\_\_\_\_.

nephr/o/ptosis

*Nephr/o* is used in words that refer to the kidney. If a kidney sags from its normal position, the medical condition is referred to as \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.

Write the correct term below each illustration:



A. \_\_\_\_\_



B. \_\_\_\_\_



C. \_\_\_\_\_



D. \_\_\_\_\_

- A. hernia
- B. ptosis
- C. anomaly
- D. aneurysm

Figure 4.4

We suggest something like these:

aneurysm: an abnormal ballooning out of a blood vessel at a weak point.

anomaly: an organ or structure that is contrary to the rule.

hernia: protrusion of an organ or part through the wall that normally contains it.

ptosis: sagging of an organ or part from its normal location.

68.

In your own words, write a brief definition for each of the following terms.

aneurysm: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

anomaly: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

hernia: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

ptosis: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

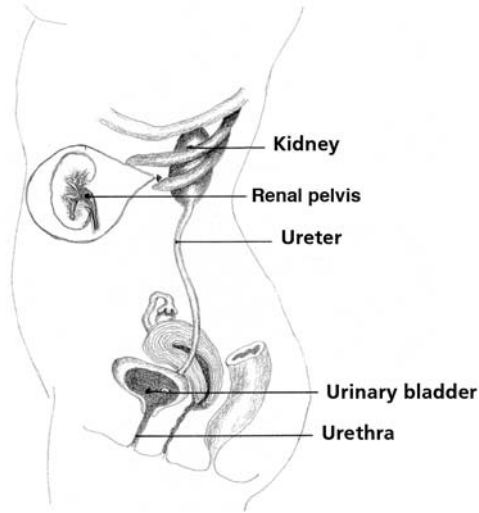


Figure 4.5 The Female Urinary Tract

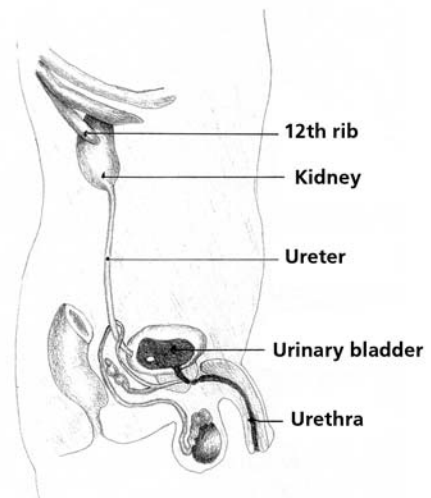


Figure 4.6 The Male Urinary Tract

The urinary system involves elimination of waste, toxic products, and surplus materials from the body. It also regulates the water and salt content of the body. The urinary tract consists of paired *kidneys* and *ureters*, a single *urinary bladder*, and a *urethra*. The main organs of excretion are the kidneys. The kidneys are bean-shaped organs about the size of a fist. They are located on either side of the spinal column and usually extend from the 12th rib. One kidney touches the spleen and the other is slightly below the liver. A ureter exits each kidney at the *renal pelvis*. This tube carries urine to the main storage organ, the urinary bladder. The bladder is a hollow muscular sac located in the midline at the floor of the pelvic cavity. It can hold as much as 700-1000 ml of urine without injury. As it distends, it rises into the abdominal cavity. The tube leading from the bladder to the exterior is the *urethra*. This tube is about one and a half inches long in the female and about eight inches long in the male as it passes through the penis.

kidney (nephro)  
bladder (cyst/o)  
urethra (urethra/o)

renal pelvis (pyelo/o)  
ureter (ureter/o)  
urine (ur/o)

69.

Let's go on to a new but related area of the body. Here is a brief summary of the functions of each part of the urinary tract.

kidney:	forms urine
renal pelvis:	collects urine in the kidney
ureter:	carries urine to the bladder
bladder:	stores urine until voiding
urethra:	discharges urine from the body

70.

ur  
ur/o

The urinary system is responsible for making urine from waste materials in the blood and carrying urine from the body. What is the word root for urine? \_\_\_\_\_ What is the combining form? \_\_\_\_\_

71.

renal pelvis

Pyel/o is the combining form that refers to the \_\_\_\_\_.

72.

pyel/itis  
pyelitis  
pī ə lī' tis

Taking what you need from the combining form for renal pelvis, form a term meaning

inflammation of the renal pelvis  
\_\_\_\_\_ / \_\_\_\_\_

pyel/o/plasty  
pyeloplasty  
pī' e lō plas tē

surgical repair of the renal pelvis  
\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

73.

abnormal condition of  
the renal pelvis and  
kidney

Pyel/o/nephr/osis means \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.

pyel/o/nephr/itis  
pyelonephritis  
pī' lō nef rī' tis

Form a term that means inflammation of the renal pelvis and kidney:  
\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.

74.

stone or calculus in the  
ureter

Look at Figures 4.5 and 4.6. Ureter/o/lith means \_\_\_\_\_  
\_\_\_\_\_.

ureter/o/lithotomy  
ureterolithotomy

Form a term that means incision into the ureter (for removal of a stone):  
 \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.  
                           ureter  calculus  incision into

75.

surgical repair of the ureter and renal pelvis

Ureter/o/pyel/o/plasty means \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_.

76.

ureter/o/pyel/itis  
ureteropyelitis

Form a term meaning inflammation of the ureter and renal pelvis:  
 \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.

77.

ureter/o/cystostomy  
ureterocystostomy

Form a term that means making a permanent opening between the ureter and bladder:  
 \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.  
                           ureter  bladder  permanent opening

78.

*Orrhaphy* is not really a suffix, but again (for simplification) it can be used as one. Orrhaphy means suturing or stitching (for the purpose of repair, especially after trauma).

Form a word meaning suturing of the ureter

ureter/orrhaphy  
ureterorrhaphy  
yer rē ter ôr' ə fē

\_\_\_\_\_ / \_\_\_\_\_

suturing of a kidney

neph/orrhaphy  
nephorrhaphy  
nef rôr' ə fē

\_\_\_\_\_ / \_\_\_\_\_

suturing the bladder

cyst/orrhaphy  
cystorrhaphy  
sis tôr' ə fē

\_\_\_\_\_ / \_\_\_\_\_

suturing of a nerve

neur/orrhaphy  
neurorrhaphy  
nyōō rôr' ə fē

\_\_\_\_\_ / \_\_\_\_\_

to carry urine out of the body or remove urine from the bladder

79. Look back at Figures 4.5 and 4.6. What is the function of the urethra? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

urethr- What is the word root for urethra? \_\_\_\_\_

suturing of the urethra (to repair) Urethr/orrhaphy means \_\_\_\_\_  
 \_\_\_\_\_.

80. Form a word that means

urethr/otomy urethrotomy incision into the urethra  
 yer ə throt' ə mē \_\_\_\_\_ / \_\_\_\_\_

urethr/o/spasm urethrospasm spasm of the urethra  
 yer rē' thrō spasm \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

81. Another complex word part is -orrhagia, which can be used as a suffix when it follows a word root. *Orrhagia* means bursting forth of blood (as in hemorrhage).

Build a word that means

cyst/orrhagia bursting forth of blood from the bladder  
 cystorrhagia \_\_\_\_\_ / \_\_\_\_\_  
 sis tō rā' jē ə

ureter/orrhagia hemorrhage of the ureter  
 ureterorrhagia \_\_\_\_\_ / \_\_\_\_\_  
 yer rē' ter ō rā' jē ə ureter bursting forth of blood

82. Di/a is the combining form meaning pass through or secrete freely. Define: (Use your dictionary.)

(How does the dictionary define these terms?) diuresis \_\_\_\_\_

diuretic \_\_\_\_\_

dialysis \_\_\_\_\_

83.

Let's have a brief review. Select the correct word root or suffix from List B. Write your selection in the space provided in List A.

cyst/o-  
aneurysm  
ureter/o-  
anomaly  
pyel/o-  
urethr/o-  
neur/o-  
hernia  
ur/o-  
nephr/o-  
-plasty  
-ptosis  
-pexy  
-lith  
-orrhaphy  
-ostomy  
-orrhagia  
-spasm

LIST A

stores urine until voiding \_\_\_\_\_  
ballooning-out vessel \_\_\_\_\_  
carries urine to bladder \_\_\_\_\_  
contrary to the rule, irregular \_\_\_\_\_  
collects urine in the kidney \_\_\_\_\_  
discharges urine from body \_\_\_\_\_  
nerve \_\_\_\_\_  
protrusion through cavity wall \_\_\_\_\_  
urine \_\_\_\_\_  
forms urine \_\_\_\_\_  
surgical repair (make new) \_\_\_\_\_  
drooping, prolapse \_\_\_\_\_  
fixing in place \_\_\_\_\_  
stone, calculus \_\_\_\_\_  
suturing to repair \_\_\_\_\_  
permanent opening \_\_\_\_\_  
hemorrhage \_\_\_\_\_  
twitching, muscle cramp \_\_\_\_\_

LIST B

nephr/o-  
pyel/o-  
urethr/o-  
ur/o-  
ureter/o-  
cyst/o-  
aneurysm  
anomaly  
hernia  
neur/o-  
-lith  
-plasty  
-ptosis  
-orrhaphy  
-orrhagia  
-ostomy  
-spasm  
-pexy

84.

Build a word for each of the following definitions.

pyelo/nephr/osis

diseased condition of renal pelvis and kidney  
\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

uretero/lith/otomy

incision to remove calculus from ureter  
\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

nephr/ptosis

sagging of the kidney  
\_\_\_\_\_ / \_\_\_\_\_

ur/ology

the study of urine and the urinary system  
\_\_\_\_\_ / \_\_\_\_\_

ureter/orrhaphy

suturing, reconnection of the ureter  
\_\_\_\_\_ / \_\_\_\_\_

nephr/plasty

repair (make new) the kidney  
\_\_\_\_\_ / \_\_\_\_\_

cyst/orrhagia

hemorrhage from the urinary bladder  
\_\_\_\_\_ / \_\_\_\_\_

nephr/pexy

surgical fixing of the kidney in its place  
\_\_\_\_\_ / \_\_\_\_\_



85.

Following are 46 of the medical terms you formed in Chapter 4. Pronounce each one aloud and spell it on paper.

aneurysm (an'yōō rizm)	myosclerosis (mī ō skler ō' sis)
angioblast (an' jē ō blast)	myospasm (mī' ō spa zm)
angiosclerosis (an' jē ō sklə rō' sis)	nephritis (nef rī' tis)
anomaly (an om' ə lē)	nephrolith (nef' rō lith)
apnea (ap' nē ə)	nephromegaly (nef' rō meg ə lē)
arteriosclerosis (ar ter' ē ō skler ō' sis)	nephroptosis (nef rop tō' sis)
arteriospasm (ar ter' ē ō spa' zm)	neurofibroma (nyōō' rō fī brō' mā)
colporrhaphy (kōl pōr' ə fē)	neurolysis (nyōō rol' ə sis)
colposcopy (kōl pōs' kō pē)	o-oblast (ō' ō blast)
cryptorchidism (krip' ōr kid ism)	oophoropexy (ōō' fōr ō pek' sē)
cystorrhagia (sis tō rā jē ə)	orchidotomy (or kid ot' ō mē)
dysmenorrhea (dis' men ōr rē' ə)	pyelitis (pī ə lī' tis)
dyspepsia (dis pep' sē ə)	pyeloplasty (pī' ə lō plas tē)
dyspnea (disp' nē ə)	salpingectomy (sal pin jek' tō mē)
hemangiitis (hē man jē ī' tis)	salpingo-oophorectomy (sal pin' gō ōō fōr ek' tō mē)
hematologist (hē mā tol' ō jist)	salpingoscopy (sal pin gos' kō pē)
hemolysis (hē mol' ə sis)	spermatoblast (sper mat' ō blast)
hernia (her' nē ə)	spermatoid (sper' ma toid)
hysteropexy (his' ter ō peks' ē)	ureterolithotomy (yer rē' ter ō lith ot' ō mē)
hysterospasm (his' ter ō spa zm)	ureterorrhaphy (yer rē ter ōr' ə fē)
hysterotomy (his ter ot' ō mē)	ureterotomy (yer ē ter ot' ə mē)
kinesialgia (kin ē' sē al' jē ə)	urethralgia (yer ə thrāl' jē ə)
kinesiology (kin ē' sē ol' ə jē)	urethrotomy (yer e throt' ə mē)

Complete the Chapter 4 Self-Test before going to the next unit.

## Chapter 4 Self-Test

### Part 1

From the list on the right, select the correct meaning for each of the following terms:

- |                         |  |
|-------------------------|--|
| _____ 1. Urethrospasm   | a. The study (or science) of motion                |
| _____ 2. Spermatoid     | b. A condition of hardening of vessels             |
| _____ 3. Nephroptosis   | c. Spasm of the urethra                            |
| _____ 4. Anomaly        | d. Destruction of blood (cells)                    |
| _____ 5. Oophoropexy    | e. Surgical fixation of the ovary in its place     |
| _____ 6. Angioblast     | f. Tumor of nerve and fibrous tissue               |
| _____ 7. Ureterotomy    | g. Muscle spasm                                    |
| _____ 8. Angiosclerosis | h. Structure contrary to the rule                  |
| _____ 9. Hysterotomy    | i. Resembling sperm                                |
| _____ 10. Myospasm      | j. Abnormally enlarged kidney                      |
| _____ 11. Dyspepsia     | k. Ballooning out of blood vessel                  |
| _____ 12. Hemolysis     | l. Painful menstruation (cramps)                   |
| _____ 13. Kinesiology   | m. Vessel germ cell                                |
| _____ 14. Aneurysm      | n. Kidney out of its normal place (dropped kidney) |
|                         | o. Incision into the uterus (cesarean section)     |
|                         | p. Painful digestion (heartburn)                   |
|                         | q. Incision into the ureter                        |

**Part 2**

Complete each of the medical terms on the right with the appropriate missing part:

- |   |                  |
|---|------------------|
| 1. A condition of hardening of muscle                             | _____ sclerosis  |
| 2. Kidney stone   | Nephro _____     |
| 3. Painful menstruation   | _____ menorrhoea |
| 4. Spasm of the uterus  | _____ spasm      |
| 5. Cessation of menses  | A _____          |
| 6. Hemorrhage (bleeding) from the bladder                         | _____ orrhagia   |
| 7. Surgical removal of the ovary                                  | _____ ectomy     |
| 8. Incision into the ureter (for the purpose of removing a stone) | _____ lithotomy  |
| 9. Surgical removal of the fallopian tube                         | _____ ectomy     |
| 10. Drooping of an organ  | P _____          |
| 11. Pain due to motion  | _____ algia      |
| 12. Spasm of the vessels  | _____ spasm      |
| 13. Protrusion of an organ through a cavity wall                  | H _____          |
| 14. Incision into the urethra                                     | _____ otomy      |

**ANSWERS**

**Part 1**

1. c
2. j
3. o
4. i
5. f
6. n
7. r
8. b

**Part 2**

1. Myosclerosis
2. Nephrolith
3. Dysmenorrhoea
4. Hysterospasm
5. Amenorrhoea
6. Cystorrhagia
7. Oophorectomy
8. Ureterolithotomy

- |       |                  |
|-------|------------------|
| 9. p  | 9. Salpingectomy |
| 10. h | 10. Ptosis       |
| 11. q | 11. Kinesialgia  |
| 12. d | 12. Angiospasm   |
| 13. a | 13. Hernia       |
| 14. l | 14. Urethrotomy  |

# 5 The Gastrointestinal Tract

*In Chapter 5 you'll make more than 50 new medical terms. Most of the learning material focuses on terms relating to the gastrointestinal (GI) tract. Three illustrations provide information you'll need as you work through the learning sequences and exercises. Be sure to bookmark those illustrations and keep them handy. Use them often.*

*Chapter 5 addresses the gastrointestinal system. Broken down, "gastrointestinal" indicates the gastric area, or the stomach, and the intestinal area immediately following the stomach to the anus, the outlet of the GI system or tract. This section of the head-to-toe assessment provides information about the health of these organs and the function of digestion and bowel elimination, including potential problems. Closely tied to the GI assessment is the abdominal assessment. These two areas are anatomically so close together that they may even be documented in one section of a head-to-toe assessment, providing data about masses, tenderness, and abnormalities inside the abdomen. This section will also include information about the liver, gall bladder, pancreas, spleen, and vascular sounds (sounds arising from blood flow) in the abdomen and kidneys. Let's get started learning terms associated with these areas.*

## Mini-Glossary

### Root Words

cheil/o (*lip, lips*)

col/o (*colon*)

dent/o (*teeth*)

esophag/o (*esophagus*)

gingiv/o (*gums*)

gloss/o (*tongue*)

hepat/o (*liver*)

pancreat/o (*pancreas*)

proct/o (*anus and rectum*)

rect/o (*rectum*)

stomat/o (*mouth*)

### Suffixes

-clysis (*irrigation*)

-ectasia (*dilation, stretching*)

-scope, -scopy (*look, examine*)

-toxin (*poison*)

Take a few minutes to complete the Review Sheet for Chapter 4 before you begin Chapter 5.

1.  
You're going to begin this section with a review of suffixes you have already studied and used.

Write the meaning of each of the following:

of, or pertaining to  
surgical repair, make  
new, restore

-ic, -as, -ar \_\_\_\_\_  
-plasty \_\_\_\_\_

inflammation of  
twitching, cramping  
pain, ache

-itis \_\_\_\_\_  
-spasm \_\_\_\_\_  
-algia \_\_\_\_\_

under, beneath  
excessive, too much  
surgical excision of  
incision into  
bursting forth,  
hemorrhage

-hypo \_\_\_\_\_  
-hyper \_\_\_\_\_  
-ectomy \_\_\_\_\_  
-otomy \_\_\_\_\_  
-orrhagia \_\_\_\_\_

a noun ending meaning  
condition, condition  
of

-a, -ia \_\_\_\_\_

abnormal condition,  
diseased condition

-osis \_\_\_\_\_

2.  
This time, write the suffix that satisfies each of the definitions given. Then go back to the last frame to check your answers.

MEANING	SUFFIX
pain, ache	_____
excessive, too much	_____
surgical incision into	_____
inflammation of	_____
under, beneath	_____
twitching, cramping	_____
surgical excision of	_____
bursting forth, hemorrhage	_____
of, or pertaining to	_____
an ending meaning condition	_____
abnormal (diseased) condition	_____

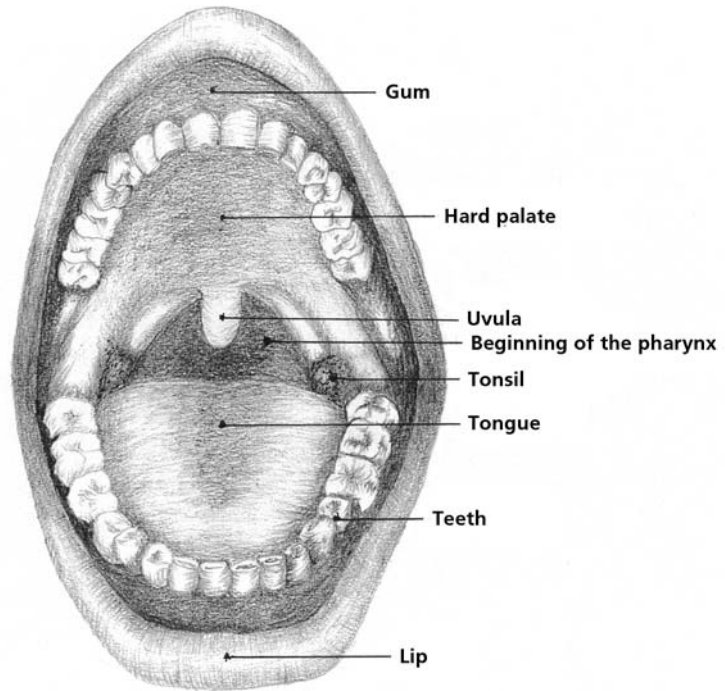


Figure 5.1 The Oral Cavity

The digestive tract begins at the mouth, the oral cavity. The human mouth is concerned with vocalization as well as mastication (chewing) and swallowing. The anterior portion includes lips, teeth, gums, a muscular tongue, related muscles, salivary glands, a bony palate, and muscles of the cheek wall. All are concerned with wetting, macerating, and pulverizing ingested material. The posterior portion of the oral cavity includes the soft palate, tongue, tonsils, and taste buds.

mouth (stomat/o)  
tongue (gloss/o)

lip (cheil/o)  
gum (gingiv/o)  
tooth (dent/o)

stomat  
stomat/o

inflammation of the  
mouth

3.  
The word root for mouth is \_\_\_\_\_.  
The combining form is \_\_\_\_\_ / \_\_\_\_\_.

4.  
Stomat/itis means \_\_\_\_\_.

surgical repair or reconstruction of the mouth

Stomat/o/plast/y means \_\_\_\_\_  
\_\_\_\_\_.

stomat/algia  
stomatalgia  
stō mā tal' jē ə  
stomat/orrhagia  
stomatorrhagia  
stō mat' ō rā' jē ə

5.  
Using the word root for mouth, form a word meaning  
painful mouth \_\_\_\_\_ / \_\_\_\_\_  
hemorrhage of the mouth  
\_\_\_\_\_ / \_\_\_\_\_  
mouth hemorrhage

painful tongue  
excision of the tongue  
spasm or twitching of the tongue

6.  
Refer to Figure 5.1.  
Gloss/algia means \_\_\_\_\_.  
Gloss/ectomy means \_\_\_\_\_.  
Gloss/o/spasm means \_\_\_\_\_.

gloss/itis  
glossitis  
glos ī' tis  
gloss/al  
glossal  
glos' əl

7.  
Using the word root, build a term meaning  
inflammation of the tongue \_\_\_\_\_ / \_\_\_\_\_  
pertaining to the tongue \_\_\_\_\_ / \_\_\_\_\_

hypo/gloss/al  
hypoglossal  
hī' pō glos' əl

8.  
What word would you use to describe a medication that is administered under the tongue?  
\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
under tongue pertaining to

cheil  
cheil/o  
kē' lō

9.  
Go back to Figure 5.1. The word root for lip is \_\_\_\_\_. The combining form for lip is \_\_\_\_\_ / \_\_\_\_\_.

inflammation of the lips

10.  
Cheil/itis means \_\_\_\_\_  
\_\_\_\_\_.

plastic surgery of the lips

Cheil/o/plast/y means \_\_\_\_\_  
\_\_\_\_\_.



- cheil/otomy  
cheilotomy  
kē lot' ō mē
11.  
Build a term meaning  
incision into the lips \_\_\_\_\_ / \_\_\_\_\_
- cheil/osis  
cheilosis  
kē lō' sis
- abnormal condition or diseased condition of the lips  
\_\_\_\_\_ / \_\_\_\_\_
- cheil/o/stomat/o/plasty  
cheilostomatoplasty  
kē' lō stō mat' ō plas tē
12.  
Now, build a term meaning plastic surgery of the lips and mouth:  
\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
lip mouth repair
- gingiv/o  
of or pertaining to gums
13.  
The combining form for gums is \_\_\_\_\_ / \_\_\_\_\_.  
Gingival means \_\_\_\_\_.
- gingiv/itis  
gingivitis  
jin ji vī' tis
14.  
Build a term meaning  
inflammation of the gums \_\_\_\_\_ / \_\_\_\_\_
- gingiv/algia  
gingivalgia  
jin ji val' jē ə
- painful gums \_\_\_\_\_ / \_\_\_\_\_
- gingiv/ectomy  
gingivectomy  
jin ji vek' tə mē
- excision of gum tissue \_\_\_\_\_ / \_\_\_\_\_
- gingiv/o/gloss/itis  
gingivoglossitis  
jin' ji vō glos ī' tis
- inflammation of the  
gums
15.  
Here's a quick review. Without referring to the tables, write a  
meaning for each of the following.
- surgical excision of  
the tongue
- glossectomy \_\_\_\_\_
- toothache
- dentalgia \_\_\_\_\_
- plastic surgery, repair of  
the lips
- cheiloplasty \_\_\_\_\_
- hemorrhage of the  
mouth
- stomatorrhagia \_\_\_\_\_

16.

Using the suggested word roots, make a medical term that fits each definition below.

SUGGESTED ANSWERS:

- stomat-
- cheil-
- gingiv-
- gloss-
- dent-

- glossitis
- cheilosis
- dentalgia
- stomatoplasty
- gingivectomy

- inflammation of the tongue \_\_\_\_\_
- abnormal, diseased condition of the lips \_\_\_\_\_
- toothache \_\_\_\_\_
- plastic surgery, repair of the mouth \_\_\_\_\_
- surgical excision of gum tissue \_\_\_\_\_

Take a break. You deserve it.

17.

Again, you will use many suffixes you are already familiar with. Here's an opportunity to refresh your memory. See how many you can correctly define. Write your answers in the space provided.

- puncture of cavity, to withdraw fluid
- incision into
- form a new (permanent) opening
- study of
- surgical fixation of a part in its normal place
- hernia, herniation
- calculus, stone
- large, enlarged

- centesis \_\_\_\_\_
- otomy \_\_\_\_\_
- ostomy \_\_\_\_\_
- ology \_\_\_\_\_
- pexy \_\_\_\_\_
- cele \_\_\_\_\_
- lith \_\_\_\_\_
- megaly \_\_\_\_\_

18.

Now, complete the table below. You will use it in the next few frames. Write the suffix that satisfies the definition given. Check your answers in frame 17.

Meaning	Suffix
calculus, stone	- _____
surgical fixation of a part in place	- _____
incision into	- _____
study of	- _____
hernia, herniation	- _____
large, enlarged	- _____
form a new opening (permanent)	- _____
puncture a cavity and draw fluid	- _____

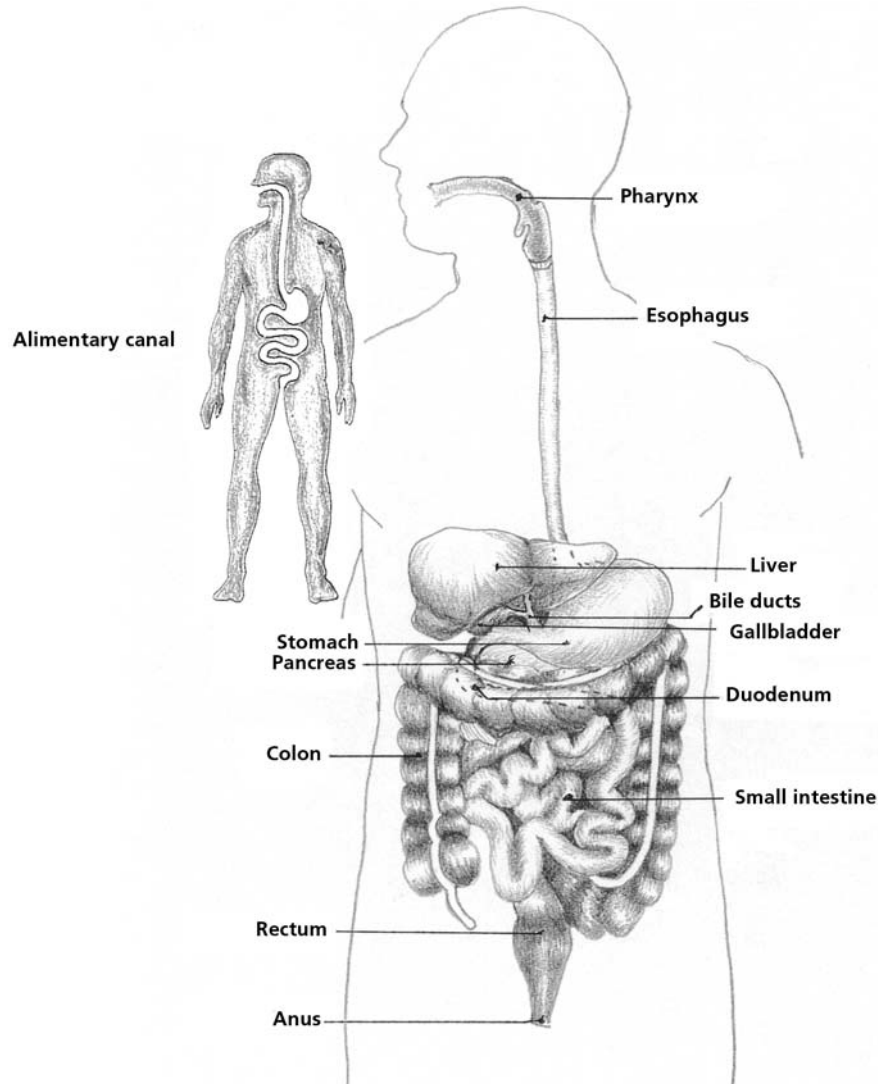


Figure 5.2 The Digestive Tract

The function of the digestive system is to break down large food particles into smaller ones that can pass across the membranes of cells and be absorbed. The digestive tract, also known as the *alimentary canal*, consists of a single long tube extending from mouth to anus and opened to the exterior at each end. The canal begins with

the oral cavity. Here the teeth pulverize ingested food. Meanwhile it is softened and partly digested by salivary gland secretions. The tongue aids in mechanical manipulation of the food and literally flips the food into the fibromuscular *pharynx* during swallowing. The *esophagus* moves the food bolus along to the pouchlike *stomach* by peristaltic muscular contractions. Here the food mixes with acid and protein-digesting enzymes and is retained until digested further. Passing from the stomach, the food enters the first part of the small intestine, called the *duodenum*. Liver-produced bile, stored in the *gallbladder*, is discharged into the duodenum by *bile ducts*. Digestive enzymes from the *pancreas* enter the duodenum as well. The food bolus continues through the highly coiled 20-foot-long *small intestine*. A great portion of the abdominal cavity is taken up by the many folds and twists of this organ. Small molecular nutrients are extracted and absorbed by cells lining the intestine. These nutrients absorbed throughout the tract are transferred to capillaries and transported to the *liver* by the hepatic portal system for processing and distribution to the body's cells. The *colon* or large intestine can be seen ascending along the anatomical right side, passing across the midline, then turning and descending along the left. This organ is mainly concerned with absorption of water, minerals, and certain vitamins. The non-nutritive residue of the ingested food is compacted and moved through the *rectum* and the *anal canal* to the outside.

liver (hepat/o)	stomach (gastr/o)
pharynx (pharyng/o)	gallbladder (cholecyst/o)
esophagus (esophag/o)	duodenum (duoden/o)
intestine (enter/o)	colon (col/o)
rectum and anus (proct/o)	pancreas (pancreat/o)
rectum (rect/o)	anus (an/o)

19.  
Here are some easy ones. Gastr/orrhagia means \_\_\_\_\_.  
stomach hemorrhage  
inflammation of the  
stomach  
Gastritis means \_\_\_\_\_.  
of, or pertaining to,  
the stomach  
Gastric means \_\_\_\_\_.

20.  
Here are some new suffixes.

- ectasia means dilation, stretching, or expansion
- clysis means irrigation, or washing out
- toxin means poison, or poisoning

Use Figure 5.2 and write a meaning for the following medical terms.

poisoning of the small  
intestine  
enter/o/toxin \_\_\_\_\_  
stretching, dilation of  
the small intestine  
enter/ectasia \_\_\_\_\_  
irrigation, washing out  
of the small intestine  
enter/o/clysis \_\_\_\_\_

21.  
What do you think col/o/clysis means? \_\_\_\_\_  
washing, irrigation of  
the colon  
What does gastr/ectasia mean? \_\_\_\_\_  
dilation, stretching, or  
expanding of the  
stomach

22.  
Use Figure 5.2 as you need to, and try these.  
col/o/pexy means \_\_\_\_\_  
a surgical procedure to  
fix the colon in its  
normal place  
enter/o/cele means \_\_\_\_\_  
herniation of the small  
intestine  
col/ostomy means \_\_\_\_\_  
a surgical procedure  
to make a new  
(permanent) opening  
into the colon

- gastr/o/enter/ostomy  
gastroenterostomy  
gas' trō en ter os' tō mē \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_
- gastr/o/enter/ic  
gastroenteric  
gas' trō en ter' ik \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_
- enter/o/clysis  
enteroclysis  
en ter ok' li sis \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_
- enter/ectasia  
enterectasia  
en' ter ek tā' jē ə \_\_\_\_\_ / \_\_\_\_\_
23.  
Form a term describing a surgical procedure that forms a new opening between the stomach and small intestine
24.  
Refer to Figure 5.2 again. Build a term meaning washing or irrigation of the small intestine
- dilation of the small intestine
25.  
What do the following terms mean?
- poisoning of the small intestine enter/o/toxin \_\_\_\_\_
- puncture of the small intestine, to withdraw fluid enter/o/centesis \_\_\_\_\_
- intestinal hernia enter/o/cele \_\_\_\_\_
26.  
Try these.
- pertaining to the colon or large intestine col/ic \_\_\_\_\_
- puncture of the colon, draw fluid col/o/centesis \_\_\_\_\_
- making a permanent opening into the colon col/ostomy \_\_\_\_\_
27.  
Build a term meaning surgical fixation of the colon \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_
- col/o/pexy  
colopexy  
kō' lō pek sē

col/o/clysis washing or irrigation of the colon  
 colocolysis \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 kō lok' li sis

col/itis inflammation of the colon \_\_\_\_\_ / \_\_\_\_\_  
 colitis  
 kō lī' tis

28.  
 Refer to Figure 5.2 again. The combining form for rectum is  
 \_\_\_\_\_ / \_\_\_\_\_.

What does each of the following mean?

pertaining to the rectum  
 rect/al \_\_\_\_\_  
 \_\_\_\_\_

a rectal hernia  
 rect/o/cele \_\_\_\_\_  
 \_\_\_\_\_

washing or irrigation of the rectum (enema)  
 rect/o/clysis \_\_\_\_\_  
 \_\_\_\_\_

29.  
 Build a word meaning  
 inflammation of the rectum and colon  
 \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

rect/o/cyst/otomy incision of the bladder through the rectum  
 rectocystotomy \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 rek' tō sis tot' ə mē                      rectum                      bladder                      incision into

30.  
 Proctology is the study of diseases of the anus and rectum. A  
 specialist in diseases of the anus and rectum  
 proct/o/log/ist is one who \_\_\_\_\_  
 \_\_\_\_\_.

31.  
 Build a word meaning washing or irrigation of anus and rectum:  
 \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.

32.  
 Pronounce that one several times.

Write a meaning for each of the following:  
 instrument for examining the anus and rectum  
 proct/o/scope \_\_\_\_\_  
 \_\_\_\_\_  
 prok' tə skōp



examination of the  
anus and rectum  
prok tos' kō pē

proct/o/scopy \_\_\_\_\_  
\_\_\_\_\_

33.  
Back to Figure 5.2. What is the combining form for liver?  
\_\_\_\_\_

hepat/o

pertaining to the liver

Hepat/ic means \_\_\_\_\_.

an abnormal condition  
of enlargement of  
the liver

Hepatomegaly means \_\_\_\_\_.

hepat/o/scop/y  
hepatoscopy  
hep ə tos' kō pē

34.  
Build a word meaning  
inspection (examination) of the liver  
\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

hepat/otomy  
hepatotomy  
hep ə tot' ō mē

incision into the liver  
\_\_\_\_\_ / \_\_\_\_\_

hepat/itis  
hepatitis  
hep ə tī' tis

inflammation of the liver  
\_\_\_\_\_ / \_\_\_\_\_

pertaining to the  
pancreas

35.  
Here's another new term. Pancreat/ic means \_\_\_\_\_  
\_\_\_\_\_.

Underline the part of the term that means dissolution or destruction.

pancreat/o/lysis

pancreat/o/lys/is

pancreat/o/lith  
pancreatolith  
pan krē at' ə lith

36.  
Build a word meaning  
a stone or calculus in the pancreas  
\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
pancreas stone

pancreat/itis  
pancreatitis  
pan krē a tī' tis

inflammation of the pancreas  
\_\_\_\_\_ / \_\_\_\_\_

pancreat/ectomy  
pancreatectomy  
pan krē a tek' tō mē

excision of part or all of the pancreas  
\_\_\_\_\_ / \_\_\_\_\_

pancreat/otomy  
pancreatotomy  
pan krē a tot' ə mē

incision into the pancreas  
\_\_\_\_\_ / \_\_\_\_\_

esophag/o/duoden/  
ostomy  
esophagoduodenostomy  
ē sof' ə gō dōō' ō den  
os' tō mē

37.  
When an entire gastrectomy is performed, a new connection (opening) is formed between the esophagus and duodenum. This is called an \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.

(Note: Remember to name the anatomical parts in the order in which food passes through them.)

38.  
As you rewrite each of the following, analyze it (make your own diagonal divisions) and pronounce it to yourself:

gastr/o/enter/o/col/  
ostomy

gastroenterocolostomy  
\_\_\_\_\_

esophag/o/gastr/  
ostomy

esophagogastrostomy  
\_\_\_\_\_

enter/o/chol/e/cyst/  
ostomy

enterocholecystostomy  
\_\_\_\_\_

39.  
Try it again:

proct/ectasia  
\_\_\_\_\_

duoden/o/chol/e/cyst/  
ostomy

duodenocholecystostomy  
\_\_\_\_\_

esophag/o/gastr/o/  
scopy

esophagogastroscopy  
\_\_\_\_\_

40.  
Let's review what you just covered. Using the suggested answers, write the meaning of each of the following terms.

**SUGGESTED ANSWERS:**

- |           |          |                 |
|-----------|----------|-----------------|
| colon     | lips     | rectum          |
| duodenum  | liver    | anus and rectum |
| esophagus | mouth    | small intestine |
| gums      | pancreas | tongue          |
| stomach   |          |                 |

rectum	rect/o _____
colon	col/o _____
pancreas	pancreat/o _____
rectum and anus	proct/o _____
lips	cheil/o _____
mouth	stomat/o _____
small intestine	enter/o _____
esophagus	esophag/o _____
gums	gingiv/o _____
tongue	gloss/o _____
liver	hepat/o _____
duodenum	duoden/o _____
stomach	gastr/o _____

41.  
Try these.

SUGGESTED ANSWERS:

make a new opening	stretching
poison	irrigation
look, examine	

irrigation	-clysis _____
look, examine	-scope, -scopy _____
make a new opening	-ostomy _____
stretching	-ectasia _____
poison	-toxin _____

42.  
In your own words, write the meaning of each of the following medical terms.

a new opening between the esophagus and duodenum	esophag/o/duoden/ostomy _____ _____
inspection of the anus and rectum (with an instrument)	proct/oscopy _____ _____

plastic surgery of the lips      cheil/o/plasty  
\_\_\_\_\_

stretching of the esophagus      esophag/o/ectasia  
\_\_\_\_\_

irrigation of the anus and rectum (and lower colon; enema)      proct/o/clysis  
\_\_\_\_\_

pain of the stomach and intestine      gastr/o/enter/algia  
\_\_\_\_\_

incision into the pancreas      pancreat/otomy  
\_\_\_\_\_

tumor of the mouth      stomat/oma  
\_\_\_\_\_

spasm of the tongue      gloss/o/spasm  
\_\_\_\_\_

43.

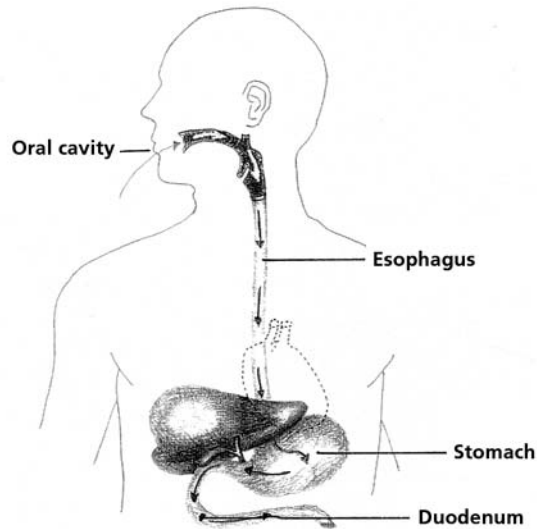
Some terms are composed of many word roots plus a prefix and a suffix. These terms usually list the parts of the body in a special order.

Take a look at Figure 5.3 below. For example, when you swallow food it passes from the mouth to the esophagus to the stomach to the duodenum. So when a physician takes a look inside the digestive system with an endoscope the procedure is called

an endoscopic exam of the esophagus, stomach, and duodenum

esophago / gastro / duoden / oscopy

Describe what the procedure EGD means. \_\_\_\_\_  
\_\_\_\_\_



**Figure 5.3** Path of EGD Examination

44.

Here are 25 medical terms for practicing your pronunciation. Say the term aloud and then say what it means. Then take the Chapter 5 Self-Test.

cheilitis (kē lī' tis)

cheiloplasty (kē' lō plas tē)

colic (kol' ik)

colitis (kō lī' tis)

colostomy (kō los' tō mē)

dentalgia (den tal' jē ə)

enterocele (en' ter ō sēl)

enteroclysis (en ter ok' li sis)

enterotoxin (en' ter ō tox in)

esophagogastroscope

(ē sof' ə gō gas tros' kō pē)

gastrastasia (gas trek tā' zhə)

gastrorrhagia (gas' trō rā' jē ə)

gingivectomy

(jin ji vek' tō mē)

gingivoglossitis

(jin' ji vō glos ī' tis)

glossospasm (glos' ō spa zm)

hepatitis (hep a tī' tis)

hepatomegaly (hep a tō meg' a lē)

hepatorrhagia (hep a tō rā' jē ə)

hypoglossal (hī' pō glos' əl)

pancreatectomy

(pan krē a tek' tō mē)

proctoclysis (prok tok' li sis)

proctoscopy (prok tos' kō pē)

rectal (rek' t'l)

stomatitis (stō mā tī' tis)

stomatorrhagia (stō māt ō rā' jē ə)

## Chapter 5 Self-Test

### Part 1

From the list on the right, select the correct meaning for each of the following often used medical terms.

- |                         |   |
|-------------------------|---|
| _____ 1. Proctoclysis   | a. Make a new opening in the colon  |
| _____ 2. Stomatoplasty  | b. Abnormal enlargement of the liver  |
| _____ 3. Hepatectomy    | c. Of or pertaining to teeth  |
| _____ 4. Stomatorrhagia | d. Intestinal poisoning   |
| _____ 5. Colic          | e. Stretching, dilation of the stomach                                      |
| _____ 6. Enteroclysis   | f. Spasm of the tongue  |
| _____ 7. Glossospasm    | g. Hemorrhage of the mouth  |
| _____ 8. Dental         | h. Irrigation of the rectum and anus  |
| _____ 9. Enterotoxin    | i. Plastic surgery of the mouth   |
| _____ 10. Cheilitis     | j. Relating to the colon  |
| _____ 11. Colostomy     | k. Plastic surgery of the lips  |
| _____ 12. Gastrectasia  | l. Irrigation of the intestine  |
| _____ 13. Cheiloplasty  | m. Surgical removal of (part of) the liver                                  |
| _____ 14. Hepatomegaly  | n. Examination (looking into) the rectum through the anus with an endoscope |
| _____ 15. Proctoscopy   | o. Inflammation of the lips   |

**Part 2**

Complete each of the medical terms on the right with the appropriate terms.

1. Under the tongue \_\_\_\_\_
2. Surgical removal of the pancreas \_\_\_\_\_
3. Hemorrhage of the mouth \_\_\_\_\_
4. Inflammation of the lips \_\_\_\_\_
5. Enlarged liver \_\_\_\_\_
6. Stretching or dilation of the stomach \_\_\_\_\_
7. Spasm of the tongue \_\_\_\_\_
8. Plastic surgery of the lips \_\_\_\_\_
9. Intestinal hernia \_\_\_\_\_
10. Inflammation of the liver \_\_\_\_\_
11. Instrument for examining the rectum and anus \_\_\_\_\_
12. Pertaining to the rectum \_\_\_\_\_
13. Formation of a new opening in the colon \_\_\_\_\_
14. Painful tongue \_\_\_\_\_
15. Irrigation of the rectum and anus \_\_\_\_\_

**ANSWERS**

**Part 1**

1. h
2. i
3. m
4. g
5. j
6. l
7. f
8. c
9. d
10. o

**Part 2**

1. Hypoglossal
2. Pancreatectomy
3. Stomatorrhagia
4. Cheilitis
5. Hepatomegaly
6. Gastrectasia
7. Glossospasm
8. Cheiloplasty
9. Enterocele
10. Hepatitis

- |       |                  |
|-------|------------------|
| 11. a | 11. Proctoscope  |
| 12. e | 12. Rectal       |
| 13. k | 13. Colostomy    |
| 14. b | 14. Glossalgia   |
| 15. n | 15. Proctoclysis |



# 6 The Heart

*Chapter 6 focuses on the gross anatomy of the heart and how the heart works. You'll create terms relating to abnormal conditions of the heart, and its abnormal functions. You'll also cover some new prefixes and suffixes as shown below.*

*As you learn the terms associated with the heart, remember that this is another important step in the head-to-toe assessment. As you can imagine, this section includes a lot of important data on a client's health status. The cardiac section includes any problems with the heart, veins, or arteries. Arteries are the vessels that carry blood away from the heart to provide oxygen to the tissues in the body. Veins are the vessels that carry un-oxygenated blood back to the heart to pick up more oxygen and discard waste. There will often be an extensive description in the assessment of heart sounds. Abnormal heart sounds are described as murmurs and may be documented. There also may be information on arrhythmias or an abnormal heart rhythm. Depending on the client's history, this section may be brief or extensive.*

*In this chapter you will also be exposed to many terms involved in the extremity portion of the head-to-toe assessment. The extremities section includes the arms and legs, as the name suggests. Information in this section of the medical record would include peripheral perfusion (or how the blood vessels provide blood to and remove blood from the extremities), capillary refill (whether the smallest of blood vessels are providing and removing blood to the hands and feet), pulses, sensory assessment of the periphery (checking the nerve function for feeling in the arms and legs), mobility assessments (the ability to move), deformations, and any abnormalities in the human periphery. Let's get started learning the new terms associated with this area!*

## Mini-Glossary

### Root Words

algisia (sense of pain)

angi/o (vessel)

arteri/o (artery)

cardiac arrest (stopped heart)

dactyl/o ( <i>fingers</i> )	myel/o ( <i>spinal cord, bone marrow</i> )
defibrillation ( <i>heart shocked to a regular heartbeat</i> )	phas/o ( <i>speech</i> )
embolism ( <i>obstruction of a blood vessel</i> )	phleb/o ( <i>vein</i> )
embolus ( <i>foreign particle in the bloodstream</i> )	plas/o ( <i>formation</i> )
esthesia ( <i>feeling, sensation</i> )	thrombosis ( <i>blood clot occluding a vessel</i> )
fibrillation ( <i>very fast, irregular heartbeat</i> )	thrombus ( <i>a blood clot</i> )

**Prefixes**

a-, an- ( <i>absent, without</i> )
brady- ( <i>slow</i> )
dys- ( <i>bad, difficult, painful</i> )
macro- ( <i>large</i> )
micro- ( <i>small, very small</i> )
tachy- ( <i>fast</i> )

**Suffixes**

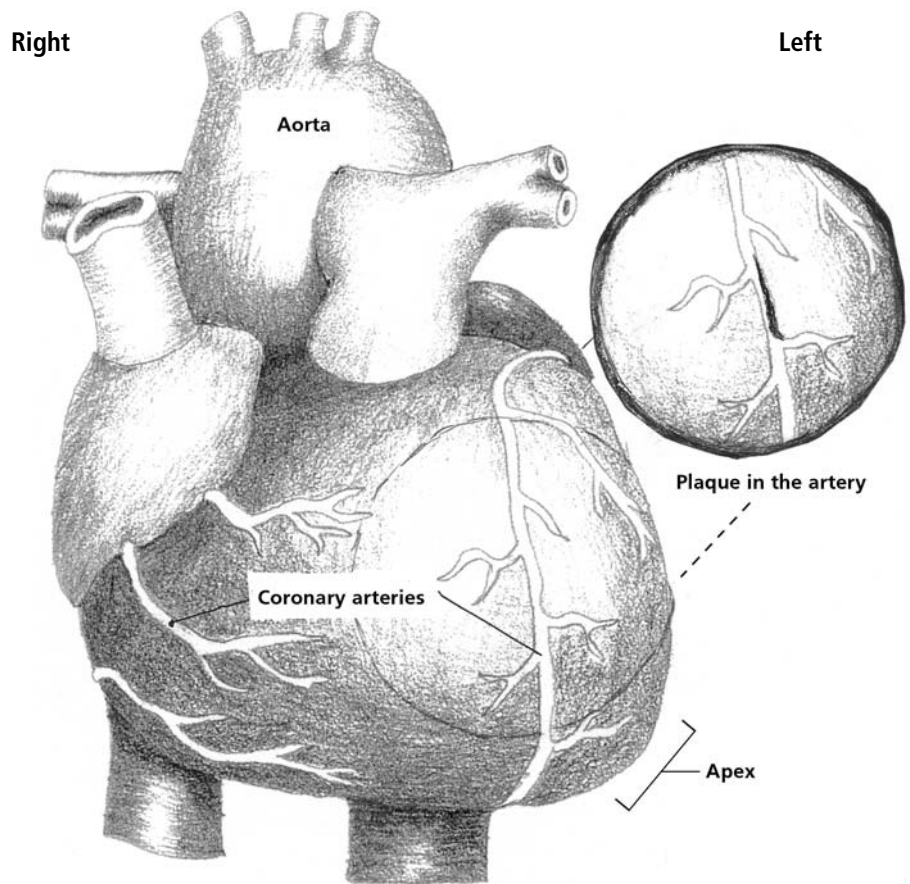
poly- ( <i>many</i> )
sym-, syn- ( <i>together</i> )
-orrhexis ( <i>rupture, bursting apart</i> )
-tripsy ( <i>rubbing, crushing</i> )
-emia ( <i>blood</i> )

Before you begin Chapter 6, take the time to complete the Review Sheet for Chapter 5. It will refresh your memory of the terms and word parts you studied. Find out how much you've learned.

The *heart* is the pump of the circulatory system. It is about the size of a fist. It's hollow and cone-shaped, with its apex at the bottom. The heart uses arteries to deliver oxygen-rich blood to the cells, tissues, and organs. Oxygen-depleted blood returns to the heart via the veins. The heart then pumps oxygen-deficient blood to the lungs where it becomes oxygen-enriched and returns to the heart for another circulatory round.

The *coronary arteries* are so named because they form an upside down "crown" on the surface of the heart. Both left and right arteries arise from small openings in the *aorta* just beyond the left side of the heart. The two main arteries form many branches and terminate in multitudes of tiny arteries that pass into the heart muscle and supply it with oxygen and nutrients.

*Atherosclerotic plaque* within the coronary artery may reduce blood flow and cause insufficient oxygen to reach the heart muscle.



**Figure 6.1.** Coronary Arteries: Nourishment to the Heart

This condition often induces sharp, crushing chest pain. *Coronary thrombosis* means the coronary vessel may be occluded (closed off). Consequently, the cardiac muscle does not receive oxygen and can be severely damaged. *Fibrillation* (see below) may occur, and/or *cardiac arrest* may follow.

1.

Let's try something different. Some terms referring to abnormal conditions of the heart or blood vessels can be confusing. Read each definition carefully and select the terms that refer to a condition or procedure involving only the heart. Put an X in the box.

- thrombus
- coronary thrombosis
  
- embolus
- embolism
- cardiac arrest
  
- fibrillation
- defibrillation

- Thrombus* is a circulating blood clot.
- Coronary thrombosis* is a blood clot that occludes a coronary vessel of the heart and can cause an ischemic portion of the cardiac muscle.
- Embolus* is a foreign or abnormal particle circulating in the blood, such as a bubble of air, a blood clot, or cholesterol plaque.
- Embolism* is the sudden obstruction of a blood vessel by an embolus.
- Cardiac arrest* is the complete cessation of heart function. (If the heartbeat cannot be restored, the patient dies.)
- Fibrillation* means very fast and irregular heartbeat.
- Defibrillation* means using an electrical impulse to shock the heart and bring about a regular heartbeat.

Now review the terms and their meanings again. This time *circle* each term that refers to a condition of the blood or blood vessels.

2.

Try these. A blood clot floating through the blood stream is known as a *thrombus*. When a blood clot occludes a vessel, the condition is called *thrombosis*. The part of the word meaning abnormal or diseased condition is \_\_\_\_\_.

-osis

3.

Refer to the definitions in Frame 1. An embolus is any foreign or abnormal particle circulating in the blood, such as an air bubble, a cholesterol deposit, or even a blood clot. Embolism is the condition caused by an \_\_\_\_\_.

embolus  
em' bō lus

A circulating blood clot is a \_\_\_\_\_. But any foreign particle (including a blood clot) circulating through the blood-stream is an \_\_\_\_\_.

thrombus  
throm' bus  
embolus

4.

When a vessel is suddenly occluded by an embolus, the resulting condition is known as an \_\_\_\_\_ism.

embol (ism)  
em' bō lizm

When a sudden vessel occlusion is caused by a thrombus, the resulting condition is a \_\_\_\_\_osis.

thromb (osis)  
throm bō' sis

A blood clot occluding a coronary (heart) vessel is a condition called coronary \_\_\_\_\_.

thrombosis

5.

Embolism is caused by an \_\_\_\_\_.

embolus

Thrombosis is caused by a \_\_\_\_\_.

thrombus

6.  
 coronary thrombosis A sudden blocking or occlusion of the coronary vessel of the heart by a blood clot is a \_\_\_\_\_ .
7.  
 Cardiac fibrillation may result from coronary thrombosis. During this condition the heart beats 200 to 400 times a minute and is very irregular. If something is not done quickly, fibrillation will exhaust the heart and it will stop beating altogether.  
 An electrical spark can be utilized to shock the heart and bring about a slower and regular heartbeat, resulting in *defibrillation*.  
defibrillation  
 dē fib ri lā' shun Underline the term that indicates the better outcome:  
 cardiac arrest / defibrillation
8.  
 cardiac arrest A very fast, irregular heartbeat, left unchecked, may lead to a complete cessation of heart functioning known as \_\_\_\_\_ .
9.  
 defibrillation A very fast, irregular heartbeat is called fibrillation. Using an electrical spark to shock the heart and bring about a regular heartbeat is called \_\_\_\_\_ .
10.  
 Write the correct term for each of the following definitions:  
 thrombus a blood clot floating through the bloodstream \_\_\_\_\_  
 defibrillation using an electrical impulse to shock the heart and restore a regular heartbeat \_\_\_\_\_  
 cardiac arrest complete cessation of heart functioning \_\_\_\_\_  
 fibrillation a very fast, irregular heartbeat \_\_\_\_\_  
 embolism sudden blocking or occlusion of a vessel by something that floated in the bloodstream \_\_\_\_\_  
 coronary thrombosis sudden blocking of the coronary vessel by a blood clot \_\_\_\_\_

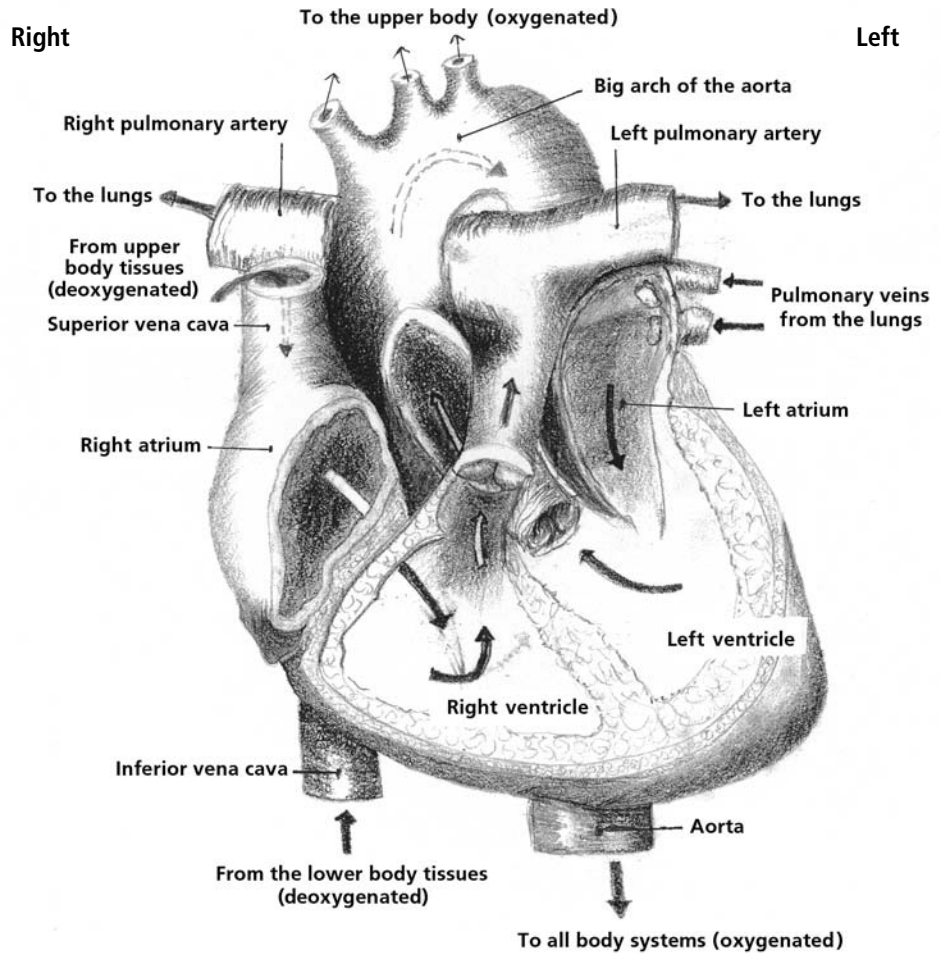


Figure 6.2 The Cardiovascular System

The *heart* is the muscular pump of the cardiovascular system. It pumps blood to the lungs and body systems and receives blood back for recirculation. Each day, the heart beats about 100,000 times at a rate of approximately 70 beats per minute.

The heart contains four cavities, or chambers: two on the right side (pulmonary heart), two on the left (systemic heart). Pulmonary circulation carries blood to and from the lungs. The systemic circulation supplies oxygen- and nutrient-rich blood to the body cells, tissues, and organs. After completing the systemic circuit, all blood returns to the heart through the two main veins, the *superior vena cava* and the *inferior vena cava*.

These vena cavae meet at the *right atrium*, a thin-walled chamber that serves as a collecting station. From the right atrium, the blood flows downward into the *right ventricle*, the smaller of the two muscular heart chambers. When the ventricle contracts, blood is forced upward, as in the illustration. It is pumped through the *right and left pulmonary arteries*, which lead to the two lungs. This begins the pulmonary circuit. Blood is pumped to the lungs for oxygenation, then returns to the heart for distribution to the body.

Blood from the lungs returns to the *left atrium* of the heart via the *pulmonary veins*. The veins are shown only on the left side of the heart; in the illustration they are hidden on the right side. From the left atrium (a collecting station) blood flows downward and enters the *left ventricle*, which is the larger of the two side-by-side muscular chambers. When the ventricles contract, simultaneously, the oxygenated blood is forced upward from the left ventricle through the big arch and into the aorta. From the aorta split all the arteries that perfuse the body tissues with oxygen and nutrients. Arteries arising from the aorta reach all parts of the head, upper extremities, thorax, abdomen, pelvic cavity, and lower extremities. After the blood nourishes the tissues, it returns to the heart to complete the circulation.

artery (arteri/o)	vein (phleb/o)
vessel (angi/o)	lung (pneumon/o)

abnormally slow

11.  
*Brady* is used in words to mean abnormally slow.  
 Brady/cardia means \_\_\_\_\_ heart action.

brady/cardia  
 bradycardia  
 brad ē kär' dē ə

12.  
 The term for abnormally slow heart action is  
 \_\_\_\_\_ / \_\_\_\_\_.

abnormally fast or rapid  
 heart action

13.  
*Tachy-* is used in words to show the opposite of abnormally slow.  
 Thus tachy/cardia means \_\_\_\_\_  
 \_\_\_\_\_.

tachy/cardia  
 tachycardia  
 tak ə kär' dē ə

14.  
 Write the medical term for an abnormally fast heartbeat:  
 \_\_\_\_\_ / \_\_\_\_\_.

15.

Here's a quick review of what we have just covered. From List B select the best meaning for each term in List A. Write your choice in the space provided.

abnormally slow  
abnormally fast  
foreign body in  
circulating blood  
circulating blood clot  
very fast irregular  
heartbeat

LIST A  
brady- \_\_\_\_\_  
tachy- \_\_\_\_\_  
embolus \_\_\_\_\_  
thrombus \_\_\_\_\_  
fibrillation \_\_\_\_\_

LIST B  
foreign body in circulating blood  
abnormally slow  
circulating blood clot  
abnormally fast  
very fast irregular heartbeat

heart

16.

Arteries are vessels that carry oxygenated blood *away* from the heart. Veins are vessels that carry unoxygenated blood *back to* the \_\_\_\_\_. This rule is only not true in cardiac circulation regarding oxygen status. Fetal circulation follows a different set of rules.

a radiographic picture  
of the heart vessels  
(arteries and veins)

17.

Note: Angi/o is the term used for vessels, whether the vessel is an artery or a vein.

What is a cardioangiogram? \_\_\_\_\_  
\_\_\_\_\_

arteries

phleb/o/scler/osis  
phlebosclerosis  
flēb' ō skler ō' sis

18.

A combining form for vein is phleb/o. If arteriosclerosis is hardening of the \_\_\_\_\_,

then hardening of veins is called  
\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.  
vein hardening condition

phleb/otomy  
phlebotomy  
flē bot' ō mē  
phleb/itis  
phlebitis  
flē bī' tis

19.

Build a word meaning

incision into a vein (venisection or cut down)  
\_\_\_\_\_ / \_\_\_\_\_

inflammation of a vein  
\_\_\_\_\_ / \_\_\_\_\_



20.  
Thromb/o is the combining form that means clot.  
Thromb/o/angi/itis means inflammation of a vessel with formation of a \_\_\_\_\_.
- clot
21.  
Thromb/ectomy means \_\_\_\_\_.
- excision of a thrombus (clot)
22.  
Thromb/o/phleb/itis means \_\_\_\_\_.
- inflammation of a vein with thrombus formation
23.  
A synonym for clot is \_\_\_\_\_.
- thrombus
24.  
Build a word meaning  
a condition caused by a clot \_\_\_\_\_ / \_\_\_\_\_
- thromb/osis  
thrombosis  
throm bō' sis
- a cell that aids in clotting  
\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_
- thromb/o/cyte  
thrombocyte  
throm' bō sīt
- resembling a clot  
\_\_\_\_\_ / \_\_\_\_\_
- thromb/oid  
thromboid  
throm' boid
25.  
Let's review. Add the correct term to each of the definitions below.
- Cardiac arrest \_\_\_\_\_ is the complete cessation of heart function.
- Coronary thrombosis \_\_\_\_\_ is a heart attack caused by a blood clot occluding the coronary blood vessel.
- Defibrillation \_\_\_\_\_ is a procedure using an electrical spark to shock the heart and bring about a regular heartbeat.
- Embolism \_\_\_\_\_ is the sudden obstruction of a blood vessel by an embolus.
- Embolus \_\_\_\_\_ is a foreign or abnormal particle circulating in the bloodstream such as an air bubble, fat globule, or cholesterol plaque.

Fibrillation \_\_\_\_\_ means a very fast (200–400 beats/min) and irregular heartbeat.

Thrombus \_\_\_\_\_ is a blood clot in the bloodstream.

In this next section, you are taking on some new suffixes and prefixes.

26.

From the suggested answers select the meaning of each of the combining forms listed below.

SUGGESTED ANSWERS:

blood vessel                      blood clot

artery                                vein

lung(s)

arteri/o \_\_\_\_\_

thromb/o \_\_\_\_\_

phleb/o \_\_\_\_\_

angi/o \_\_\_\_\_

pulmon/o \_\_\_\_\_

It's time to take a short break.

27.

Try this one.

The suffix -orrhexis means rupture.

Cyst/orrhexis means \_\_\_\_\_

rupture of the bladder \_\_\_\_\_.

rupture of the small intestine Enter/orrhexis means \_\_\_\_\_

\_\_\_\_\_.

rupture of a blood vessel Angi/orrhexis means \_\_\_\_\_

\_\_\_\_\_.

28.

Build a word meaning

cardi/orrhexis  
cardiorrhexis  
kār dē ō rek' sis  
rupture of the heart

\_\_\_\_\_ / \_\_\_\_\_

phleb/orrhexis  
phleborrhexis

rupture of a vein

flē bō rek' sis  
\_\_\_\_\_ / \_\_\_\_\_

29.

Here's a chance to use all the "orrh" suffixes with some combining forms to help you.

- orrhexis means rupture, bursting apart
- orrhagia means burst forth, hemorrhage
- orrhaphy means repair, suture together, close
- orrhoea means flow, discharge

rhin/o            salping/o  
 cyst/o            hepat/o

Build a medical term to satisfy each of the following definitions.

- cyst/orrhexis            \_\_\_\_\_ / \_\_\_\_\_
- rupture of the (urinary) bladder
- hepat/orrhagia        \_\_\_\_\_ / \_\_\_\_\_
- hemorrhage from the liver
- rhin/orrhoea            \_\_\_\_\_ / \_\_\_\_\_
- flowing from the nose (runny nose)
- salping/orrhaphy      \_\_\_\_\_ / \_\_\_\_\_
- suturing (or joining) the fallopian tubes
- suturing (or closing) a hernia      What does herniorrhaphy mean? \_\_\_\_\_

30.

Fill in the blank to complete these definitions

SUGGESTED ANSWERS:

- orrhagia            -orrhaphy
- orrhoea            -orrhexis

- orrhaphy            \_\_\_\_\_ means repair, close, suture
- orrhagia            \_\_\_\_\_ means burst forth, hemorrhage
- orrhoea            \_\_\_\_\_ means discharge, flowing
- orrhexis            \_\_\_\_\_ means rupture, bursting apart

31.

*An-* is a form of the prefix *a-* meaning without. *Esthesia* means feeling or sensation. Give the meaning of the following words:

- a condition of being without feeling      anesthesia \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

the study or science of removing feeling \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

instrument for measuring feeling or sensation \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

abnormal sensitivity (to pain) \_\_\_\_\_  
 \_\_\_\_\_

32.  
 Analyze the following words (you do the dividing):  
 an/esthesi/o/log/ist \_\_\_\_\_  
 an' es thēz ē ol' ō jist  
 anesthesiologist \_\_\_\_\_  
 hypo/esthes/ia \_\_\_\_\_  
 hī pō es thē' zē ə  
 hypoesthesia \_\_\_\_\_

33.  
 Algesia is a word meaning a sense of pain. What does analgesia mean? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

34.  
 The prefixes *a-* and *an-* mean without. Examine the following two lists of words:

an/ <i>alg</i> esia	a/ <i>bi</i> otic
an/ <i>em</i> ia	a/ <i>der</i> mia
an/ <i>enceph</i> alus	a/ <i>fe</i> brile
an/ <i>esth</i> esia	a/ <i>k</i> inesia
an/ <i>ony</i> chia	a/ <i>men</i> ia
an/ <i>op</i> ia	a/ <i>menorr</i> hea
an/ <i>ur</i> ia	a/ <i>p</i> nea
an/ <i>ur</i> esis	a/ <i>seps</i> is

Draw a conclusion: When the word root begins with a consonant, use the prefix \_\_\_\_\_.

When the word root begins with a vowel, use the prefix \_\_\_\_\_.

35.  
 Put the proper form of the prefix before each of the following roots and then write a meaning for each.  
 \_\_\_\_\_emic \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

*anemic*—a condition of less blood

astomia—without a \_\_\_\_\_ stomia \_\_\_\_\_  
 mouth (congenital) \_\_\_\_\_

afebrile—without fever \_\_\_\_\_ febrile \_\_\_\_\_

anodontia— toothless \_\_\_\_\_ odontia \_\_\_\_\_

36.

Here's some practice with other prefixes. *Phas/o* means speech. Write a meaning for each of the following:

speechless \_\_\_\_\_ aphasia \_\_\_\_\_

abnormally fast speech \_\_\_\_\_ tachyphasia \_\_\_\_\_

abnormally slow speech \_\_\_\_\_ bradyphasia \_\_\_\_\_

pain or difficulty when \_\_\_\_\_ dysphasia \_\_\_\_\_  
 speaking \_\_\_\_\_

37.

pain along the course \_\_\_\_\_  
 of a nerve (or \_\_\_\_\_  
 equivalent) \_\_\_\_\_

38.

*Tripsis*, from which we get trips/y, is a Greek word that means "rub" or "massage." Neur/o/trips/y means surgical crushing of a nerve. The word root for crushing (usually by rubbing or grinding) is \_\_\_\_\_.

trips

neur/o/trips/y  
 neurotripsy  
 nyōō' rō trip sē

Tripsis can be carried to the point of crushing or grinding. Surgical crushing of a nerve is called \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.

39.

In some cases of cholelithiasis, it may be necessary to crush calculi so they can pass from the gallbladder. A word meaning surgical crushing of gallstones is \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.

chole/lith/o/trips/y  
 cholelithotripsy  
 kō lē lith' ō trip sē

40.

Myel/itis can mean either inflammation of bone marrow or inflammation of the spinal cord. From the definitions, you may conclude

bone marrow  
spinal cord

that *myel* can be the word root for both \_\_\_\_\_  
and \_\_\_\_\_.

an immature bone  
marrow cell

41.  
The suffix *-blast* means an immature cell (in the process of develop-  
ing). In the term myel/o/blast, the word root myel refers to bone  
marrow. Write the meaning of myel/o/blast: \_\_\_\_\_  
\_\_\_\_\_.

hernia of the spinal  
cord

In myel/o/cele, the word root refers to spinal cord. Write the  
meaning of myel/o/cele: \_\_\_\_\_  
\_\_\_\_\_.

bone marrow or  
spinal cord

42.  
A medical term built on the word root myel may refer to different  
structures of the body. It may refer to either \_\_\_\_\_  
or \_\_\_\_\_.

bad, defective (poor or  
abnormal formation)

43.  
You have learned that dys- means pain, painful. But dys- is a prefix  
that also means bad (defective) or difficult. Try this.  
*Plasia* means formation or change, in the sense of molding during  
the *growing years*. This kind of formation occurs naturally instead of  
being done by a plastic surgeon. Dys/plasia means \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.

hyper/plasia  
hyperplasia  
hī' per plā' zha

44.  
A/plasia means failure of an organ to develop properly. A term that  
means overgrowth or excessive development in the formative years  
is \_\_\_\_\_ / \_\_\_\_\_.

hypo/plasia  
hypoplasia  
hī' pō plā' zha

45.  
If overdevelopment is hyperplasia, underdevelopment is expressed as  
\_\_\_\_\_ / \_\_\_\_\_.

chondr/o/dys/plasia  
chondrodysplasia  
kon' drō dis plā' zhə  
bad (defective)  
development of  
cartilage

46.  
Myel/o/dys/plasia means defective development of the spinal cord.  
What does chondr/o/dys/plasia mean? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.

oste/o/chondr/o/dys/  
 plasia  
 osteochondrodysplasia  
 os' tē ō kon' drō dis  
 plā' zhə  
 defective formation of  
 bone and cartilage

47.  
 Write the meaning of osteochondrodysplasia. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

48.  
 Here's another quick review before moving on.

SUGGESTED ANSWERS:

- algesia phas/o
- dys plas/o
- tripsy lith/o
- myel/o

Write the suffix or combining form that refers to each of the following words.

myel/o  
 phas/o  
 -algesia  
 lith/o  
 -tripsy  
 myel/o  
 dys-  
 plas/o

spinal cord \_\_\_\_\_  
 speech \_\_\_\_\_  
 sensation of pain \_\_\_\_\_  
 calculus \_\_\_\_\_  
 rubbing, crushing (procedure) \_\_\_\_\_  
 bone marrow \_\_\_\_\_  
 painful, difficult, bad \_\_\_\_\_  
 formation, development \_\_\_\_\_

49.  
 Explain the meaning of the following medical terms.

abnormally slow speech  
 rubbing, crushing of a  
 nerve  
 incision to remove a  
 gallstone  
 radiographic exam of  
 the spinal cord  
 bad development  
 (formation) of  
 cartilage  
 lack of pain sensation

bradyphasia \_\_\_\_\_  
 neurotripsy \_\_\_\_\_  
 \_\_\_\_\_  
 cholelithotomy \_\_\_\_\_  
 \_\_\_\_\_  
 myelogram \_\_\_\_\_  
 \_\_\_\_\_  
 chondrodysplasia \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 analgesia \_\_\_\_\_  
 \_\_\_\_\_

microns  
mī' krons  
micr/o/meter  
micrometer  
mī krom' ə tər

50.  
The *micron* (1/1000 mm) is a unit of measurement. Many cocci are 2 microns in diameter. A red blood cell is 7 \_\_\_\_\_ in diameter.

An instrument for measuring the diameter of something microscopic is a \_\_\_\_\_ / \_\_\_\_\_ / meter.

large

51.  
On the other hand, *macr/o* is the opposite of *micr/o*. *Macr/o* is used in words to mean \_\_\_\_\_.

a large immature cell  
visible by the naked  
eye

52.  
Things that are *macr/o/scop/ic* can be seen with the naked eye. Give a meaning for *macroblast*. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*macr/o/cephal/us*  
mak rō se fal' us

53.  
An abnormally large head is  
\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.

*macr/o/cyte*

An abnormally large cell is a  
\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.

*macr/o/cocc/us*

A very large coccus is called a  
\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.

In each case there is a  
condition of—

54.  
The suffix *-ia* indicates a condition. Pronounce each term and write a meaning.

abnormally large tongue  
mak rō glos' ē ə

*macr/o/gloss/ia* \_\_\_\_\_  
\_\_\_\_\_

abnormally large ear(s)  
mak rō' shē ə

*macr/ot/ia* \_\_\_\_\_  
\_\_\_\_\_

abnormally large nose  
mak rō rin' ē ə

*macr/o/rhin/ia* \_\_\_\_\_  
\_\_\_\_\_

abnormally large lips  
mak rō kē' lē ə

*macr/o/cheil/ia* \_\_\_\_\_  
\_\_\_\_\_

dactyl  
dak' til

55.  
*macr/o/dactyl/ia* means abnormally large fingers or toes. The word root for fingers or toes is \_\_\_\_\_.



<p>enlarged digits, or another way of saying large fingers or toes</p>	<p>56. What does dactyl/o/megaly mean? _____</p>
<p>dactyl/o</p>	<p>57. A finger or toe is called a digit or dactyl. But the combining form for digit is _____ / _____.</p>
<p>dactyl/itis dactylitis dak til ī' tis</p>	<p>Build a term meaning inflammation of a digit _____ / _____</p>
<p>dactyl/o/spasm dactylospasm dak til' ō spa zm</p>	<p>cramp or spasm of a digit _____ / _____ / _____</p>
<p>dactyl/o/gram dactylogram dak til' ō gram</p>	<p>a fingerprint _____ / _____ / _____</p>
<p>abnormally large fingers and toes (digits)</p>	<p>58. Macr/o/dactyl/ia means _____ _____.</p>
<p>fingers or toes (digits)</p>	<p>Poly/dactyl/ism means too many _____ _____.</p>
<p>poly/ur/ia polyuria pol ē yer' ē ə</p>	<p>59. <i>Poly-</i> is a prefix meaning too many or too much. Poly/ur/ia means excessive amount of urine. When a person drinks a lot of fluid, _____ / _____ / _____ results.</p>
<p>polyneuritis pol ē nyōō rī' tis</p>	<p>60. <i>Path</i> refers to disease. Poly/neur/o/path/y means disease of many nerves.</p>
<p>inflammation of many nerves</p>	<p>What does poly/neur/itis mean? _____ _____</p>
<p>inflammation of many joints</p>	<p>61. Write the meaning of the following: poly/arthr/itis _____ _____</p>
<p>pain in several nerves</p>	<p>poly/neur/algia _____ _____</p>

- syn/ergetic  
synergetic  
sin er je' tik
62.  
Syn/ergetic means working together. Drugs that work together to increase the effects of one another are called \_\_\_\_\_ / \_\_\_\_\_ drugs.
- synergetic
63.  
Synergetic muscles are muscles that work together. It is on frequent occasions that a single movement requires multiple muscles working together. The function of these muscles is described as \_\_\_\_\_.
- synergetic
64.  
APC tablets combine aspirin, phenacetin, and caffeine and are thought by some to be more effective for killing pain than aspirin alone. This is because aspirin, phenacetin, and caffeine are \_\_\_\_\_ drugs.
- a fused joint that moves as one
65.  
Syn/arthr/osis means an immovable joint; adjoining bones are fused together. When bones of a joint are fused so they all move as one, the condition is syn/arthr/osis. What does it mean? \_\_\_\_\_
- syndactylism  
synarthrosis
- Underline the part of the word that means joined together as one:  
syndactylism  
synarthrosis
- a condition of two or more digits joined together as one
66.  
What does syn/dactyl/ism mean (-ism denotes a medical condition or disease)? \_\_\_\_\_
- together or joined as one
67.  
Syn- and sym- are different forms of the same prefix: syn- and sym- mean \_\_\_\_\_.
68.  
Use the prefix sym- when the word root begins with the consonants b, m, or p; use syn- in all other cases. Write the prefix for each of the following:
- syn- \_\_\_\_\_ arthrosis  
sym- \_\_\_\_\_ metrical  
sym- \_\_\_\_\_ bolism  
sym- \_\_\_\_\_ physis  
syn- \_\_\_\_\_ drome

sym- \_\_\_\_\_ pathy  
 sym- \_\_\_\_\_ biosis

69.  
 Both syn- and sym- mean \_\_\_\_\_  
 joined as one, together \_\_\_\_\_; sym- is used when followed by the letters \_\_\_\_\_,  
 b, m, p \_\_\_\_\_, or \_\_\_\_\_; syn- is used in other medical words.

70.  
 Time to review. Complete each brief definition. Refer to the suggested answers. Write your selection in the space provided.

SUGGESTED ANSWERS:

algesia phas/o  
 brady phleb/o  
 dactyl/o plas/o  
 embolus tachy  
 esthesia

algesia a sensation of pain \_\_\_\_\_  
 phleb/o veins \_\_\_\_\_  
 embolus foreign particle circulating in the blood \_\_\_\_\_  
 esthesia feeling, sensation \_\_\_\_\_  
 phas/o speech \_\_\_\_\_  
 plas/o formation, development \_\_\_\_\_  
 dactyl/o digits \_\_\_\_\_  
 brady abnormally slow \_\_\_\_\_  
 tachy abnormally fast \_\_\_\_\_

71.  
 Try these.

SUGGESTED ANSWERS:

a-, an- -orrhagia  
 dys- -orrhaphy  
 macro- -orrhexis  
 micro- syn-, sym-  
 -orrhoea -tripsy

-orrhexis rupture, burst apart \_\_\_\_\_  
 syn-, sym- together, as one \_\_\_\_\_  
 dys- defective, difficult, painful \_\_\_\_\_  
 -orrhagia hemorrhage, burst forth \_\_\_\_\_

macro-	large _____
-tripsy	crushing, rubbing _____
micro-	microscopic, very small _____
-orrhœa	flowing, discharge _____
a-, an-	without, absent _____
-orrhaphy	suturing (repair of) _____

72.

Here are some suggestions:

In your own words, write the meaning for each of the following:

crushing of a nerve	neur/o/tripsy _____
without sensation of pain	an/esthesia _____
bad formation of the spinal cord	myel/o/dys/plasia _____
a condition of a blood clot in the coronary artery	coronary thrombosis _____ _____
pertaining to something too small to see with the naked eye	micro/scop/ic _____ _____
without speech, speechless	a/phasia _____
a condition of fingers joined together as one	syn/dactyl/ism _____
surgical repair of a hernia	herni/orrhaphy _____
hemorrhage of the liver	hepat/orrhagia _____
without, or absent, pain	an/algesia _____
complete cessation of heart function	cardiac arrest _____
electrical shock of the heart to restore regular rhythm	defibrillation _____ _____

ruptured blood vessel (vein)	phleb/orrhexis
abnormally slow heartbeat	brady/cardia

73.

Here are 32 medical terms for practicing your pronunciation. Say the term aloud and then say what it means. Then take the Chapter 6 Self-Test.

analgesia (an' al jē' zē ə)	hypoesthesia (hī' pō es thē' zhə)
anemia (an ē' mē ə)	hypoplasia (hī' pō plā' zhə)
anesthesiologist (an' es thē zē ol' ō jist)	hysterorrhexis (his' ter ō rek' sis)
angiogram (an' gē ō gram)	lithotripsy (lith' ō trip sē)
bradycardia (brad ē kär' dē ə)	macrocephalus (mak' rō se fal' us)
cardiorrhexis (kär dē ōr rek' sis)	macrocheilia (mak' rō kē' lē ə)
chondrodysplasia (kon' drō dis plā' zhə)	macrotia (mak rō' shē ə)
cystorrhexis (sis tō rek' sis)	micrometer (mī krom' ə ter)
dactylogram (dak til' ō gram)	neuromyelitis (nyōō' rō mī il ī' tis)
dactylomegaly (dak' til ō meg' ə lē)	neurotripsy (nyōō' rō trip sē)
defibrillation (dē fib ri lā' shun)	phlebitis (flē bī' tis)
embolism (em'bō lizm)	polyarthritis (pol ē arth rī' tis)
embolus (em' bō lus)	polyuria (pol ē yer' ē ə)
esthesiometer (es thē zē om' ə ter)	syndactylism (sin dak' til izm)
hyperesthesia (hī' per es thē' zhə)	tachycardia (tak ə kär' dē ə)
	thrombosis (throm bō' sis)
	thrombus (throm' bus)

## Chapter 6 Self-Test

### Part 1

From the list on the right, select the correct meaning for each of the following often used medical terms. Put the letter in the space provided.

- |                          |   |
|--------------------------|---|
| _____ 1. Lithotripsy     | a. Inflammation of a vein                                   |
| _____ 2. Thrombosis      | b. Shocking the heart to restore a normal heartbeat         |
| _____ 3. Polyarthritis   | c. Obstruction of a blood vessel by an embolus              |
| _____ 4. Anesthetist     | d. Abnormally enlarged head                                 |
| _____ 5. Synarthrosis    | e. Absence of pain  |
| _____ 6. Phlebitis       | f. Inflammation of many joints                              |
| _____ 7. Hysterorrhexis  | g. A specialist who removes all feeling or sensation        |
| _____ 8. Dactylogram     | h. Crushing of a calculus                                   |
| _____ 9. Analgesia       | i. Bursting apart of the uterus                             |
| _____ 10. Defibrillation | j. Fingerprint  |
| _____ 11. Bradykinesia   | k. Speechless   |
| _____ 12. Neuromyelitis  | l. Clotted condition of a blood vessel                      |
| _____ 13. Macrocephalus  | m. Inflammation of the nerves of the spinal cord            |
| _____ 14. Hypoesthesia   | n. Less than normal sensation                               |
| _____ 15. Embolism       | o. Immovable joint, bones of a joint joined together as one |
| _____ 16. Aphasia        | p. Abnormally slow movement                                 |

**Part 2**

Complete each of the medical terms on the right with the appropriate missing part or word.

1. Rupture (bursting apart) of the urinary bladder \_\_\_\_\_
2. Abnormally intense feeling or sensation \_\_\_\_\_
3. Foreign particle occluding a blood vessel \_\_\_\_\_ism
4. Rupture (bursting apart) of the heart \_\_\_\_\_
5. Abnormally large head \_\_\_\_\_
6. Inflammation of many nerves \_\_\_\_\_
7. Pain along the course of a nerve \_\_\_\_\_
8. A stopped heart \_\_\_\_\_(2 wds)
9. Abnormally large fingers \_\_\_\_\_
10. Foreign substance circulating in the bloodstream \_\_\_\_\_
11. Instrument for measuring feeling, sensation \_\_\_\_\_
12. A blood clot circulating in the bloodstream \_\_\_\_\_
13. Crushing destruction of a nerve \_\_\_\_\_
14. Absent the ability to speak, speechless \_\_\_\_\_
15. Fingers grown together as one \_\_\_\_\_
16. Abnormally fast heartbeat \_\_\_\_\_

**ANSWERS****Part 1**

1. h.
2. l.
3. f.
4. g.
5. o.
6. a.

**Part 2**

1. Cystorrhesis
2. Hyperesthesia
3. Embolism
4. Cardiorrhesis
5. Macrocephalus
6. Polyneuritis

- |        |                   |
|--------|-------------------|
| 7. i.  | 7. Neuralgia      |
| 8. j.  | 8. Cardiac arrest |
| 9. e.  | 9. Dactylomegaly  |
| 10. b. | 10. Embolus       |
| 11. p. | 11. Esthesiometer |
| 12. m. | 12. Thrombus      |
| 13. d. | 13. Neurotripsy   |
| 14. n. | 14. Aphasia       |
| 15. c. | 15. Syndactylism  |
| 16. k. | 16. Tachycardia   |



# **7** Symptoms, Diagnoses, Treatments, Communication Qualifiers, and Statistics

*In this chapter you will learn many terms related to signs and symptoms, diagnoses, treatments, and statistics. Some words will be familiar, but you'll use them in new ways.*

## **Signs**

atrophy  
edema  
hypertrophy  
pulse  
respiration  
temperature

## **Qualifiers**

acute  
central  
chronic  
generalized  
localized  
paroxysmal  
peripheral

## **Word Parts**

anti- (*against*)  
chlor/o (*green*)  
erythr/o (*red*)  
melan/o (*black*)  
pyret/o (*fever*)  
xanth/o (*yellow*)

## **Symptoms**

anorexia  
dyspnea  
malaise  
nausea  
tinnitus  
vertigo

## **Treatments**

active  
palliative  
prophylactic  
systemic

## **Diagnoses**

prodrome  
prognosis  
syndrome

## **Statistics**

morbidity  
mortality

Be sure to complete the Chapter 6 Review Sheet before continuing.

## Signs and Symptoms

sight  
 sound  
 smell  
 taste  
 feel

1.

What are signs and symptoms? Signs are objective, able to be measured by an outside observer. Symptoms, on the other hand, are subjective, meaning the client experiences them. Symptoms are not readily available to an observer, and it is imperative that the individual give a complete description of the experience. An example of patients' signs and symptoms could be that they have a large laceration on their arm and they state that they are in pain. The laceration is the sign, and the pain they feel is the symptom. A patient experiences symptoms through one or more of the five organs of sense. Can you name them?

---

2.

Simply put, a sign or a symptom is evidence of either a normal or an abnormal body process. If it is something the client feels, tastes, hears, smells, or sees, it is a symptom. If it is something observed by the examiner, it is a sign. Sometimes signs and symptoms are reported together and may appear to be both. These reports can be divided into one or the other using the above definition. Let's practice:

	SIGN	SYMPTOM	
sign	<input type="checkbox"/>	<input type="checkbox"/>	swelling of the wrist
symptom	<input type="checkbox"/>	<input type="checkbox"/>	ringing (tinkling sound) in the ear
symptom	<input type="checkbox"/>	<input type="checkbox"/>	sourness in the mouth
symptom	<input type="checkbox"/>	<input type="checkbox"/>	ammonia sensation in the nose
symptom	<input type="checkbox"/>	<input type="checkbox"/>	painful elbow
sign	<input type="checkbox"/>	<input type="checkbox"/>	blue discoloration around the eye
sign	<input type="checkbox"/>	<input type="checkbox"/>	very rapid breathing
symptom	<input type="checkbox"/>	<input type="checkbox"/>	pain in the heel
sign	<input type="checkbox"/>	<input type="checkbox"/>	fever
symptom	<input type="checkbox"/>	<input type="checkbox"/>	painful muscle spasm in the leg
sign	<input type="checkbox"/>	<input type="checkbox"/>	slow heartbeat
sign	<input type="checkbox"/>	<input type="checkbox"/>	pale complexion
sign	<input type="checkbox"/>	<input type="checkbox"/>	eyes closed, not responding to questions or poking

3.

An abnormality apparent to an examiner is called a

sign

---

4.  
 Any change in body function or structure that the patient sees, hears, tastes, smells, or feels is called a \_\_\_\_\_.

As you can see, most evidence of illness can be observed by someone other than the patient and may be experienced by the patient as well.

## **Vital Signs**

5.  
*Vital* means relating to life. A vital sign is evidence a patient is alive. Body temperature, pulse rate, rate of respiration, and blood pressure are vital signs because they provide continuous information about the essential processes of the body. If one of these signs is absent, the patient is dead (or in big trouble). Body temperature, pulse, respirations, and blood pressure are very important indicators and are called \_\_\_\_\_.

6.  
 Vital signs can be measured. Temperature (T) loosely refers to body heat above normal. Normal body temperature is 98.6°F. Body temperature increases in a hot environment and during physical exercise. Many diseases, serious and not serious, cause a patient's temperature to rise. Elevated body temperature is called *fever*. For adults, low fever is 99° to 101°F; moderate fever is 101° to 103°F; high fever is 103° to 105°F. Increased body temperature is the body's effort to make a bad environment for bacteria or viruses in order to kill them. A patient who is afebrile has a normal body temperature, which is approximately \_\_\_\_\_ °F.

7.  
*Pyro* is a word root meaning fire or heat. (Remember the funeral pyres on which the Greeks and Romans burned their dead?) A pyromaniac has a fondness for watching things burn or starting \_\_\_\_\_.

8.  
*Pyret/o* forms words meaning fever. A patient described as pyretic would have a temperature \_\_\_\_\_ 98.6°F.  
 (above/below/same as)

9.  
 Pyrexia means fever. Fever is one way the body shows something is wrong. Fever can be observed and measured; therefore, pyrexia is a \_\_\_\_\_ of disease.  
 sign  
 sign/symptom

10.  
 Hypo/thermia refers to body temperature below normal. A patient's temperature may be lowered safely to about 80° during surgery. This controlled procedure reduces the patient's need for oxygen and makes some surgical procedures safer. The patient's lower body temperature is called \_\_\_\_\_.  
 hypothermia  
 hī pō ther' mē ə

11.  
 On the other hand, a person who falls through the ice on a pond in January will surely develop a life-threatening condition also called \_\_\_\_\_.  
 hypothermia

12.  
 Injury and dehydration can cause a patient's temperature to rise above 106°F. This life-threatening high temperature is known as \_\_\_\_\_ pyrexia.  
 hyper  
 hī per  
 (hyper/hypo)

13.  
 In an earlier unit you learned that gen/o means to produce or originate. What does pyret/o/gen mean? \_\_\_\_\_  
 that which produces  
 fever

14.  
 The measles virus produces fever. Therefore, the virus that causes measles is a \_\_\_\_\_.  
 pyretogen  
 pī ret'ō jen

15.  
 Pyret/ic means pertaining to fever. What does pyret/o/gen/ic mean? \_\_\_\_\_  
 pertains to something  
 that produces fever

16.  
*Anti-* means against. Aspirin is an anti/pyret/ic agent. What does antipyretic mean? \_\_\_\_\_  
 an agent that works  
 against fever

- fever reduction
17.  
*Lysis* means dissolution or reduction. What does pyret/o/lysis mean? \_\_\_\_\_
- without symptoms
18.  
A physician writes on a patient's chart, "The patient has a low-grade fever but is otherwise asymptomatic." What does asymptomatic mean? \_\_\_\_\_
- increase
19.  
Now let's talk about another vital sign. Pulse (P) is a rhythmical throbbing of the arterial walls. This throbbing is produced when the heart contracts and forces an increased volume of blood into the vessels. After chasing your dog down the street, you would expect your pulse rate to \_\_\_\_\_.  
(increase/decrease)
- tachycardia
20.  
The normal pulse of an average adult is 70 to 80 beats per minute. Fever usually causes a patient's heart to beat more rapidly. When a patient's pulse is 100 beats per minute or higher the condition is known as \_\_\_\_\_.  
(tachycardia/bradycardia)
- bradycardia
- On the other hand, a pulse less than 60 beats per minute indicates \_\_\_\_\_.
- sign
21.  
The patient usually does not feel a rapid, slow, or irregular pulse. However, a physician can observe and measure pulse rate; therefore, it is said to be a \_\_\_\_\_.  
(sign/symptom)
- 70 to 80
22.  
Pulse rate depends on size, sex, age, and physical condition. It's higher in women than men. It's higher in children than adults. It is higher in infants than children. But we can say that a healthy adult has an average pulse of (check one)
- 30 to 50 beats per minute.  
 70 to 80 beats per minute.

- vital sign 23.  
The pulse can be felt in many places: the umbilical stump in a newborn, a femoral artery in the groin, a pedal pulse in the foot, or the radial artery in the wrist. Although pulse is a simple measure, it provides important evidence about the life (and death) status of the patient. Therefore, it is considered a \_\_\_\_\_.
- peripheral  
per i' fer al 24.  
Periphery means outer surface of the body. It is the part of the body away from the center. A pulse taken at the wrist or ankle is a \_\_\_\_\_ pulse.  
(central/peripheral)
- central 25.  
A pulse taken near the center of the body, where the heart is, is a \_\_\_\_\_ pulse.  
(central/peripheral)
- Because it is near the  
center of the body. 26.  
A pulse taken with a stethoscope on the chest is a central pulse. Why? \_\_\_\_\_  
\_\_\_\_\_
- near the outer surface  
of the body 27.  
What does peripheral mean? \_\_\_\_\_  
\_\_\_\_\_
- accelerated 28.  
Here's the third vital sign. Respiration (R) is breathing. Breathing is a function of the respiratory system. A breath draws in oxygen. The circulating blood carries the oxygen to the tissues and then returns carbon dioxide to the lungs. The lungs breathe out the waste products of carbon dioxide and water. The normal rate of respiration for an adult is 16 to 18 breaths per minute. A respiration rate of more than 25 breaths per minute is \_\_\_\_\_ respiration.  
(accelerated/decelerated)
- an instrument for  
measuring breathing 29.  
Pne/o (pronounced nē o) means breath or breathing. Pne/o/dynamics means the mechanism of breathing. What does pne/o/meter mean? \_\_\_\_\_  
\_\_\_\_\_

30.

Here's a rule that will help you pronounce words containing the root pne/o, pne/a. When pne/o begins the word, the letter "p" is silent. The letter "p" is pronounced when a prefix comes before it. Pronounce each of the following:

a/pnea	pronounce: ap' nē ə
hyper/pnea	pronounce: hī perp' nē ə
tachy/pnea	pronounce: tak ip nē' ə
brady/pnea	pronounce: brad' ip nē ə
pneumon/ia	pronounce: nū mon' ē ə

31.

very slow breathing  
Bradycardia means very slow heartbeat. What does brady/pnea mean? \_\_\_\_\_

32.

disp' nē ə  
painful (bad) breathing  
Pronounce dys/pnea. What does it mean? \_\_\_\_\_

33.

excessively rapid  
breathing  
hī perp' nē ə  
Hyperpyrexia means excessively high temperature (over 106°F). What does hyperpnea mean? \_\_\_\_\_

34.

without breathing  
ap' nē ə  
A/symptomatic means without symptoms. What does a/pnea mean? \_\_\_\_\_  
(Pronounce it.)

35.

hyperpnea  
hī perp' nē ə  
Fever and disorders of the lungs or heart may accelerate respiration. Build a word that describes a respiration rate over 25 breaths per minute: \_\_\_\_\_.

36.

bradypnea  
brad ip nē' ə  
Very slow breathing of 8 to 9 breaths per minute occurs in serious illnesses like uremia, diabetic coma, and opium poisoning. Build a term that means very slow breathing: \_\_\_\_\_.

37.

A foreboding irregular and unusual pattern of breathing is called Cheyne-Stokes respiration. (Pronounced *chain-stokes*. It's a condition

named after two physicians who first described it more than 150 years ago.) Respiration gradually increases in rapidity and volume until the rate reaches a climax (perhaps 60 to 80 breaths per minute). Then breathing subsides and ceases entirely for up to one minute—when respirations begin again. This condition is due to disturbance of the respiratory center in the brain. It is often a forerunner of death—but may last several months or days, or even disappear.

apnea  
ap' nē ə

38.

Cheyne-Stokes respiration is cyclical. The phase of respiration, at 60 to 80 breaths per minute, is called hyperpnea. What term describes the period when all respiration ceases? \_\_\_\_\_

Cheyne-Stokes  
chain stokes

39.

In certain very serious illnesses, an irregular and arrhythmic type of breathing may occur, characterized by both hyperpneic and apneic phases, often followed by death. It is called C\_\_\_\_\_S\_\_\_\_\_ respiration. This condition is pronounced \_\_\_\_\_.

40.

The last vital sign is blood pressure. Blood pressure is part of the circulatory system and is how the body tries to balance the amount of blood delivered to the body. Blood pressure is measured in millimeters of mercury and measures the pressure inside the vascular system. Each blood pressure reading consists of a maximum pressure (systolic) and a minimum pressure (diastolic). These pressures can be altered if there is a problem with the functioning of the heart, if there is an abnormal amount of fluid in the circulatory system, if there is increased or decreased resistance inside the vessels, or if there is a change in blood viscosity. A normal blood pressure for an adult is 120/80, although there is a wide range of normal. A normotensive adult has the blood pressure of approximately \_\_\_\_\_.

120/80

41.

An elevated blood pressure would be classified as \_\_\_\_\_.

hypertensive

A decreased blood pressure would be classified as \_\_\_\_\_.

hypotensive



42. Something is very wrong with the body when a patient's respiration rate exceeds 25 breaths per minute. Respiration rate (R), fever (T), and a rapid pulse (P) are measurable signs of disease. They indicate the status of the whole body and are called \_\_\_\_\_.

vital signs

temperature

pulse

respiration

blood pressure

43. The vital signs are T \_\_\_\_\_, P \_\_\_\_\_, R \_\_\_\_\_, and B \_\_\_\_\_.

44. Let's review. Select the best meaning from column B for each brief definition in column A. Write your selection in the space provided.

	COLUMN A	COLUMN B
symptom see, hear, smell, taste, feel	bodily change a patient perceives _____	asymptomatic
	sensory ways symptoms are perceived _____	vital signs
vital signs pyrexia pī rek' sē ə hypothermia hī pō ther' mē ə hyperpyrexia hī per pī rek' se ə pyretogen pī ret' ō gen pyretolysis pī ret ō lī' sis asymptomatic ā simp tō mat' ik	temperature, pulse, respiration, and blood pressure _____	hyperpyrexia
	elevated temperature, fever _____	hypothermia
	subnormal body temperature _____	hypotension
	temperature over 106°F _____	hypertension
	something that produces fever _____	pyretogen
	reduction, dissolution of fever _____	pyretolysis
	lack of symptoms _____	pyrexia
	above normal blood pressure _____	see, hear, smell, taste, feel
	below normal blood pressure _____	symptom
	hypertension	
hypotension		

45.  
Now try these.

	COLUMN A	COLUMN B
pulse	throbbing of an artery in time with the heartbeat _____	apnea
peripheral	pulse taken at the surface of the body _____	bradypnea
pne/o, pne/a	two combining forms for breath, breathing _____ or _____	Cheyne-Stokes respiration
bradypnea	very slow breathing _____	dyspnea
dyspnea	difficult breathing _____	hyperpnea
hyperpnea	excessively fast breathing _____	peripheral
respiration	another word for breathing _____	pne/o, pne/a
apnea	respiratory arrest, not breathing _____	pulse
Cheyne-Stokes respiration	breathing that reaches a climax, then ceases before beginning again _____	respiration
	_____	

---

## Color and Other Signs

46.  
Color and changes in color of various parts of the body also tell the physician a lot about the patient's condition. For example, tissue that is black may be dead tissue, red tissue may indicate infection, blue tissue may have too little oxygen, white tissue may have too little circulating blood; yellow or green discharge could indicate infection, or yellow tissue could indicate liver dysfunction. There are many other things color can tell us. Use the information here to build words involving color.

leuk/o	white
melan/o	black
erythr/o	red
cyan/o	blue
chlor/o	green
xanth/o	yellow

- xanth/opsia  
zan thop' sē ə  
chlor/opia  
klor ō' pē ə
- erythr/o/derma  
e rith' rō der' mā  
melan/o/derma  
mel' a nō der' mā
- green (plant) cell  
white (blood) cell  
red (blood) cell
- melan/o/blast  
mel' a nō blast  
erythr/o/blast  
e rith' rō blast
- a black-pigmented  
malignant tumor
- melanocarcinoma  
mel' a nō kär si nō' mā
- green  
red  
yellow  
white
47. Cyan/opia means blue vision. Form a word meaning yellow vision \_\_\_\_\_/opsia  
green vision \_\_\_\_\_/opia
48. Cyan/o/derma means blue skin. Build a word meaning red skin \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
black (discolored) skin \_\_\_\_\_  
(You draw the lines.)
49. Write a meaning for each of the following:  
chlor/o/cyte \_\_\_\_\_.  
leuk/o/cyte \_\_\_\_\_.  
erythr/o/cyte \_\_\_\_\_.
50. -blast means immature cell. Build a word meaning an immature cell of the following colors:  
immature black cell \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
black immature cell  
immature red cell \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_
51. Melan/osis means a condition of black pigmentation. Carcinoma is a malignant tumor.  
What is a melanocarcinoma? \_\_\_\_\_  
\_\_\_\_\_
52. Whenever a hairless mole on the skin turns black and grows larger, a physician should be consulted because there is a risk of black mole cancer, or \_\_\_\_\_.
53. Chlor/o means \_\_\_\_\_.  
Erythr/o means \_\_\_\_\_.  
Xanth/o means \_\_\_\_\_.  
Leuk/o means \_\_\_\_\_.

## Qualifiers

54.

In medical terminology we often use qualifiers. These are adjectives or adverbs that when used with another word make the meaning of that term more specific. Here are a few frequently used qualifiers. *Local* means a small area or part of the body. *General* means involving the whole body or many different areas or parts of the body at the same time.

local

55.

Anesthesia may be considered either local or general. Before extracting a tooth, the dentist injects Novocain to prevent pain. Novocaine is a \_\_\_\_\_ anesthetic.

(local/general)

56.

general

On the other hand, laughing gas, which puts the patient to sleep, is a \_\_\_\_\_ anesthetic.

(local/general)

57.

When referring to a disease process, the words can be used in the form of localized or generalized. Use either localized or generalized as a label for each of the following.

localized

skin rash around the neck and ears

\_\_\_\_\_

generalized

measles macules from stem to stern

\_\_\_\_\_

localized

acne all over the face

\_\_\_\_\_

localized (two places)

second-degree scalding burn over the belly and upper thigh

\_\_\_\_\_

generalized

reddish-purple spots over the trunk of the body and wherever clothing covers the skin

\_\_\_\_\_

58.

limited to a small area  
or part of the body

A localized condition means it is \_\_\_\_\_.

involving the whole body or many areas at the same time	When a condition is generalized, it means it is _____ _____.
general	59. Systemic means pertaining to all body systems, or the whole body rather than one of its parts. It is another word for _____. (local/general)
systemic sis tem' ik or general	60. An antihistamine tablet helps a patient breathe more easily by dry- ing up mucous membranes inside the nose and sinuses. An antihis- tamine also dries up mucous membranes that line all body cavities. We say it has a _____ effect.

## Other Signs

Besides observing color and color changes, a physician inspects the patient carefully for signs and symptoms that will aid in learning about a patient's disease. Here are some observable changes in the body.

fluid	61. <i>Edema</i> refers to fluid accumulation in the tissues. It is a condition in which body tissues accumulate excessive _____.
the whole body	62. Fluid in the tissues may be local or general. Localized edema involves a small area of the body; generalized edema involves _____.
edema e dē' ma	63. A bee sting produces an accumulation of fluid in the tissues at the bite site. This is called localized _____.
generalized edema	64. Heart failure causes severe disturbance of the body's water balance mechanisms. Excessive fluid may accumulate in the lungs, legs, and abdomen. This condition is called _____ (two words). (localized/generalized)
edema	65. Excessive accumulation of fluid in the body tissues is called _____.

Atrophy  
at' rō fē

overdevelopment

66.

Atrophy is another observable sign of disease. It means a wasting away or shrinking of tissues, an organ, or the whole body. Underline the word root meaning development.

Atrophy

What does hyper/troph/y mean?

\_\_\_\_\_

67.

It's time to review. Select the best meaning from Column B for each color listed in Column A. Write your selection in the space provided.

erythr/o  
leuk/o  
cyan/o  
chlor/o  
xanth/o  
melan/o

COLUMN A

red \_\_\_\_\_  
white \_\_\_\_\_  
blue \_\_\_\_\_  
green \_\_\_\_\_  
yellow \_\_\_\_\_  
black \_\_\_\_\_

COLUMN B

cyan/o  
chlor/o  
erythr/o  
melan/o  
leuk/o  
xanth/o

68.

Select a suggested answer to complete each of the following definitions.

SUGGESTED ANSWERS:

edema                      local  
generalized              systemic  
hypertrophy              atrophy

generalized

systemic

local

edema

atrophy

hypertrophy

- (a) \_\_\_\_\_ means pertaining to the whole body or many areas at the same time.
- (b) Another term meaning the same as (a) above is \_\_\_\_\_.
- (c) An injection of anesthetic under the skin of the forearm to remove a mole is described as a \_\_\_\_\_ anesthetic.
- (d) Accumulated excess fluid in the tissues of the lower extremities may be a condition of \_\_\_\_\_.
- (e) A wasting away or shrinking of tissues of an organ or a body part is described as \_\_\_\_\_.
- (f) \_\_\_\_\_ is the term that describes the opposite of (e) above.

## Subjective Symptoms

Objective *signs* such as T, P, R, and BP are *signs* of primary importance in the investigation of an illness. However, the patient's own concerns and impressions also provide valuable information. Changes in the body not apparent to an observer but experienced by the patient are called *symptoms*.

69. Nausea means sickness of the stomach with a desire to vomit. Since it is an internal feeling evident only to the patient, we call it a \_\_\_\_\_.
- symptom
70. Pain, noxious odors, fevers, and some drugs may cause a sickness of the stomach with a desire to vomit, which is called \_\_\_\_\_.
- nausea  
naw' zē ə
71. *Mal de mer* is the French term meaning motion sickness. It is another way to describe the sick feeling of \_\_\_\_\_.
- nausea
72. Emesis means vomitus—that which is vomited. An irritation of the vomiting center in the brain produces nausea. As a result, the patient ejects the stomach contents through the mouth. The product of vomiting is \_\_\_\_\_.
- emesis (or vomitus)  
em' e sis
73. Food poisoning, drugs, and fevers can irritate the vomiting center and thus induce \_\_\_\_\_. The product of vomiting is \_\_\_\_\_.
- vomiting  
emesis
74. Chol/emesis means bile in the vomitus. What does hemat/emesis mean? \_\_\_\_\_
- blood in the vomitus
75. In an emergency, there are two quick ways to empty the stomach of its contents: (a) use a tube to “pump” the stomach, or (b) give the patient an emetic. What is an emetic? \_\_\_\_\_
- something that induces  
vomiting

nausea

The patient feels the sensation (not observable).

76.

*Nausea* usually precedes *emesis*. Circle the term that is a subjective symptom. Why? \_\_\_\_\_

---

77.

In a wide variety of illnesses, two symptoms often occur together. We'll take them one at a time.

malaise

*Malaise* is a French word literally meaning ill at ease. Underline the part of the word meaning ill.

malaise  
ma lā'z

78.

A patient with infectious mononucleosis may experience a vague sensation of not feeling well, or feeling ill at ease. The symptom is called \_\_\_\_\_.

the vague sensation of  
not feeling well

79.

Malaise is a symptom because the physician cannot observe malaise and does not experience the patient's sensation. Describe malaise.

---

loss of appetite  
an o rek' sē ə

80.

Orexia means appetite. What does an/orexia mean? \_\_\_\_\_

---

pertaining to something  
that produces or  
stimulates an appetite

81.

Orexi/mania means an abnormal desire (madness) for food or an uncontrollable appetite. What does orexi/genic mean? \_\_\_\_\_

---

orexigenic  
ō reks i gen' ik

82.

Food that smells good and is appealing to the eye stimulates appetite. We may describe this food and its presentation as \_\_\_\_\_.

anorexia  
an o rek' sē ə

83.

Along with malaise, loss of appetite is a very common symptom in many diseases. Write the term for loss of appetite: \_\_\_\_\_.



84.  
Complete each of the following definitions:
- malaise                    A vague sensation of not feeling well is \_\_\_\_\_.  
nausea                    Sickness of the stomach with a desire to vomit is \_\_\_\_\_.  
emesis                    Another word for vomitus is \_\_\_\_\_.  
pyrexia                    Elevated body temperature is \_\_\_\_\_.  
anorexia                    Loss of appetite is \_\_\_\_\_.
85.  
A patient with an infection may experience a vague sensation of not feeling well. A patient with a fever may not have an appetite. When a fever and infection occur at the same time, the patient usually reports these two very subjective symptoms. What are they?
- malaise                    \_\_\_\_\_ and \_\_\_\_\_  
anorexia
86.  
Anorexia and malaise are purely subjective symptoms. What does that mean? \_\_\_\_\_  
\_\_\_\_\_
- The patient experiences the sensation.
87.  
Vertigo means a turning around. The patient experiences the sensation of turning around in space or having objects move about him.
88.  
Vertigo is *not* dizziness, faintness, or lightheadedness. However, the patient may have difficulty maintaining equilibrium, and may describe a sensation of spinning or \_\_\_\_\_ in space.
- turning around
89.  
An infection in the middle ear can cause a patient to experience the sensation of turning around in space or of objects moving about her. This \_\_\_\_\_ is known as \_\_\_\_\_.  
(sign/symptom)
- symptom  
vertigo  
ver' ti gō
90.  
Tinnitus is a jingling, or tinkling, sound in the ear. It is often called ringing in the ear.
- Toxicity or sensitivity to a drug like aspirin can cause ringing in the ear. Write the medical term for tinkling sound in the ear:  
\_\_\_\_\_.
- tinnitus  
ti nī' tus

91.

Ménière's syndrome (pronounce ma nē ars') is a recurrent and usually progressive group of symptoms including hearing loss, ringing in the ears, a sensation of fullness or pressure in the ears, and a turning around in space.

tinnitus

The term for ringing in the ears is \_\_\_\_\_.

vertigo

The sensation of turning about in space is \_\_\_\_\_.

92.

Try these and see how much you've learned. Select the best word from the suggested answers.

SUGGESTED ANSWERS:

erythroderma	leukocyte
melanoblast	cyanemia
chlorocyte	xanthemia

chlorocyte

green (plant) cell \_\_\_\_\_

xanthemia

yellowish blood \_\_\_\_\_

melanoblast

black (dark) immature cell \_\_\_\_\_

erythroderma

reddened skin \_\_\_\_\_

leukocyte

white blood cell \_\_\_\_\_

cyanemia

blue-bloodedness \_\_\_\_\_

93.

Now try these qualifiers.

hypertrophia	atrophy
general	systemic
local	

general or systemic

pertaining to the entire body \_\_\_\_\_

hypertrophia

overdevelopment \_\_\_\_\_

local

pertaining to a small area, or one part \_\_\_\_\_

systemic

pertaining to all body systems \_\_\_\_\_

atrophy

a wasting away, underdevelopment \_\_\_\_\_

94.

Here are some objective symptoms.

tinnitus	malaise
emesis	nausea
vertigo	anorexia

vertigo	a sensation of turning around in space _____
nausea	seasickness; inclined to vomit _____
emesis	another word for vomitus _____
tinnitus	ringing in the ears _____
malaise	a vague sensation of not feeling well _____
anorexia	loss of appetite _____

## Describing Illness

95.

A diagnosis is an identification of an illness. It requires scientific and skillful methods to establish the cause and nature of a sick person's disease. A diagnosis is arrived at by evaluating (a) the history of the person's disease, (b) the signs and symptoms present, (c) laboratory data, and (d) special tests such as X rays and electrocardiograms.

96.

In your English dictionary, you'll find words beginning with *gnos*. They come from the Greek word *gnosis*, meaning knowledge. *Dia* means through. Therefore, *dia/gnosis* literally means \_\_\_\_\_.

knowing through

97.

Diagnosing an illness means studying it through its signs and symptoms and other available information. When a patient reports chills, feels hot, and has a runny nose, the physician may identify the patient's illness as a head cold. This conclusion would be the \_\_\_\_\_.

diagnosis  
dī ag nō' sis

98.

A patient complains of pain in her arm after falling off her horse. An X ray shows a broken bone in her forearm. With this information from an X ray, the physician arrives at a \_\_\_\_\_.

diagnosis

99.

What do you think hemodiagnosis means? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

identification of a  
patient's illness  
through blood  
(studies)

100.

Many diseases are complex, so establishing the cause and nature of a sick person's disease requires skill and scientific methods. Which of the following might a physician use to help identify an illness? Check one or more.

(all are relevant)

- personal and family history
- signs and symptoms
- laboratory data
- special tests, such as an X ray or ECG

101.

If an obstetrician is one who is skilled in delivering babies, what is a diagnostician? \_\_\_\_\_

one who is skilled in making diagnoses

102.

The prefix pro- means before, or in front of. What do you think is the meaning of prognosis? \_\_\_\_\_

Here's our suggestion: to predict the patient's illness (its course and outcome)

103.

Acute leukemia often may be fatal within three months. Prediction of the course and outcome of this disease is called a \_\_\_\_\_.

prognosis  
prog nō' sis

104.

What does prognosticate mean? \_\_\_\_\_

to tell what the course and likely outcome of the disease will be

105.

A prognosis predicts the course and outcome of a disease. Select a term that best fits each outcome described.

favorable                  unfavorable                  guarded

unfavorable  
favorable  
guarded

Expect the patient to die in 3 to 6 months: \_\_\_\_\_.

Recovery will be easy after surgery: \_\_\_\_\_.

Recovery will be long and difficult: \_\_\_\_\_.

106.

A patient who has little chance of recovering from his disease is said to have an (two words) \_\_\_\_\_ predicted outcome.

unfavorable/favorable

unfavorable prognosis

107.  
diagnosis When a physician has identified the patient's illness, the physician has made a \_\_\_\_\_.
108.  
prognosis Prediction of the course and outcome of the disease is a \_\_\_\_\_.
109.  
paroxysm  
par' ok sizm  
and  
paroxysmal  
par ok siz' mal  
A diagnosis may specify that the disease is acute, chronic, or paroxysmal.  
*Acute* means sharp, severe, having a rapid onset and a short course, not chronic.  
*Chronic* means long, drawn-out. A chronic disease is not acute.  
*Paroxysmal* is from the Greek word *paroxysm*. It means a sudden periodic attack or recurrence of symptoms of disease, a fit or convulsion of any kind.
110.  
chronic  
kron' ik  
Diabetes is a disease that has a long, drawn-out course. Therefore, diabetes is a \_\_\_\_\_ disease.  
(acute/chronic/paroxysmal)
111.  
paroxysmal  
par ok sis' mal  
Epilepsy is characterized by a sudden onset of symptoms that recur periodically. Therefore, epilepsy is a \_\_\_\_\_ illness.  
(acute/chronic/paroxysmal)
112.  
sudden recurring  
episode of difficult  
breathing  
Dys/pnea means difficult breathing. Paroxysmal dyspnea is another way to describe asthma. Explain paroxysmal dyspnea. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
113.  
stomach  
rapid  
severe  
short  
Gastritis may be acute or chronic. Acute gastritis means inflammation of the \_\_\_\_\_. Its onset is \_\_\_\_\_,  
(rapid/slow)  
the pain in the belly is \_\_\_\_\_, and the illness lasts a  
(mild/severe)  
\_\_\_\_\_ time.  
(short/long)

114.  
A patient has a sudden onset of fast heart rate—in excess of 200 beats per minute—and then abruptly the heart rate returns to normal. This has occurred before. The diagnosis would be \_\_\_\_\_.  
paroxysmal tachy/cardia \_\_\_\_\_ / \_\_\_\_\_.  
(acute/chronic/paroxysmal) rapid heart
115.  
Arteriosclerotic heart disease (ASHD) has a very slow onset. Symptoms may be mild and last a lifetime. ASHD is a/an \_\_\_\_\_ condition.  
chronic
116.  
Inflammatory conditions may be either acute or chronic. Acute tendonitis means the tendon becomes red, hot, and very painful in a short period of time. It returns to normal after a day or two of treatment.  
inflammation that has a slow onset (may be mild) and lasts a long time  
Describe chronic tendonitis: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
117.  
A fit or convulsion is a/an \_\_\_\_\_.  
paroxysm  
par' ok sizm  
chronic  
A long, drawn-out disease is described as \_\_\_\_\_.  
acute  
Sharp, severe symptoms, over a short course, describe a/an \_\_\_\_\_ disease.
118.  
Poly- is a prefix meaning many or much; excessive. Explain each of the following:  
an inflammation of many nerves, a rapid onset; very painful, short duration  
Acute polyneuritis means \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- an inflammation of many joints that starts slowly and lasts a long time  
Chronic polyarthritis means \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- a condition of having supernumerary fingers (or toes)  
Polydactylism means \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

119.  
*Syndrome* is a group of signs and symptoms that occur together and thus characterize a specific disease.
- a group of signs and symptoms running along together      *Syn* means together; *drome* means running along. Therefore, syndrome literally means \_\_\_\_\_.
120.  
 For example, Korsakoff's syndrome is a psychosis, ordinarily due to chronic alcoholism. It is characterized by polyneuritis, disorientation, insomnia, muttering delirium, hallucinations, and a bilateral wrist or foot drop. Korsakoff's syndrome is characterized by this group of signs and symptoms that occur \_\_\_\_\_.
- together
121.  
 A syndrome is a variety of signs and symptoms occurring together. When signs and symptoms run along together, they present a complete picture of the disease. This is known as a \_\_\_\_\_.
- syndrome  
 sin' drōm
122.  
 Alcoholism produces a characteristic group of signs and symptoms called Korsakoff's syndrome. From the name we know that a variety of \_\_\_\_\_ and \_\_\_\_\_ occur \_\_\_\_\_.
- signs  
 symptoms  
 together
123.  
 A group of symptoms occurring together characterize a specific disease. We call this group of symptoms a \_\_\_\_\_.
- syndrome
124.  
 Recurrent (and usually progressive) hearing loss, tinnitus, vertigo, and a sensation of fullness in the ears is known as Ménière's \_\_\_\_\_.
- syndrome
- The symptoms run along together.      Explain why: \_\_\_\_\_.
125.  
 Pro/drome means running before (a disease). A symptom or group of symptoms that occur a few hours or a few days before the onset of the disease are called prodromal symptoms. These early signals are called its \_\_\_\_\_.
- prodrome  
 prō' drom

126.  
 before The prodromal phase of a disease is the interval between the earliest symptoms and the appearance of a rash or fever. These symptoms occur \_\_\_\_\_ the onset of the disease.  
 (before/after)

127.  
 prodromal Sneezing that comes before the chills and fever of a common cold are the \_\_\_\_\_ symptoms of the cold.

128.  
 prodromal  
 prō drō' mal Malaise, anorexia, and sore throat occur one to four days before the fever and rash of measles appear. This early stage of the disease is called the \_\_\_\_\_ phase.

129.  
 It's time to review what you just covered. From the suggested answers, select the best term for each brief definition.

diagnose paroxysm acute prognosis syndrome asymptomatic chronic prodromal	asymptomatic      acute prognosis          prodromal chronic              diagnose syndrome          paroxysm
to identify an illness _____	a sudden, recurrent attack _____
pertaining to severe symptoms and rapid onset _____	prediction of course and outcome of illness _____
symptoms occurring together as a disease _____	relating to symptom-free _____
pertaining to a long, drawn-out illness _____	earliest phase of signals and symptoms occurring before the onset of the fever or rash associated with a disease _____

130.  
 diagnosis Using the standard method of investigation called the head-to-toe assessment, a health care provider gathers information about a patient's illness in order to learn the cause and nature of a sick person's disease. Identification of the illness is called a \_\_\_\_\_.



---

## Treatment

Treatment is the medical, surgical, or psychiatric management of a patient's illness. Although there are many different kinds of treatments, we're covering only a few of the most common.

131.

active

Active treatment aims for a cure. A patient suffering from appendicitis expects to be cured after an appendectomy. Since surgery removes the patient's appendix and usually cures the patient's disease, it is an \_\_\_\_\_ treatment.

132.

active

An antibiotic attacks the bacteria causing peritonitis. Therefore, antibiotic therapy is considered an \_\_\_\_\_ treatment.

133.

systemic  
sis tem' ik

Systemic treatment attacks constitutional signs and symptoms such as pyrexia, shock, and pain. Treatment directed toward control of these life-threatening signs is called \_\_\_\_\_ treatment.

134.

life-threatening or  
constitutional

Giving a patient morphine for pain is a systemic treatment that aims to relieve a \_\_\_\_\_ sign or symptom.

135.

systemic

Hyperpyrexia is a constitutional sign. Placing a hyperpyrexic child in a basin of ice water reduces the whole body temperature and is therefore a \_\_\_\_\_ treatment.

136.

palliative  
pal' ē a tiv

Palliative treatment relieves bothersome symptoms and makes a patient comfortable. Very little the physician can do alters the course of poison ivy dermatitis. The physician may suggest calamine lotion to reduce itching and burning, and therefore, calamine is called a \_\_\_\_\_ treatment.

137.

prophylactic  
prō fi lak' tic

Prophylaxis is a treatment modality that focuses on prevention of disease. Your dentist aims to prevent dental cavities by applying flouride solution to your teeth. Flouride application is called a \_\_\_\_\_ treatment.

138.  
Whether active, symptomatic, palliative, or prophylactic, things the physician does or prescribes to manage a patient's illness are called treatments \_\_\_\_\_.

139.  
Palliative treatment addresses a patient's comfort rather than attempting to cure the disease. The purpose of this kind of treatment is to \_\_\_\_\_.

140.  
Active treatment squarely addresses the patient's pathological condition. The physician elects an active treatment modality when a remedy or therapy will \_\_\_\_\_ the disease.

141.  
Shock, pyrexia, and pain are indications of disease that if not treated could have very serious consequences. Systemic treatment is directed toward very serious constitutional signs of illness that may be \_\_\_\_\_.

142.  
From the terms listed, select one that best fits each description.

active prophylactic  systemic active palliative prophylactic	palliative systemic  treatment of constitutional symptoms _____ treatment directed specifically toward a cure _____ treatment to relieve discomfort _____ treatment aimed at preventing disease _____
--	---

143.  
There are many remedies and therapies a physician may use to treat a patient's illness. Here are a few of the major classes for you to investigate. Look up *therapy* and see if you can define the words below.

pharmacotherapy physical therapy chemotherapy	radiotherapy electroshock therapy psychotherapy
---	---

## Statistics

In medicine and health care, many people keep score. The Department of Health and Human Services (HHS) of the U.S. government and the World Health Organization (WHO) of the United Nations publish statistics showing how many people are affected by certain diseases and how many people die of their illnesses. In order to understand the statistics, there are two important terms to know: *morbidity* and *mortality*.

144.  
 morbidity (or sickness)  
 mor bid' i tē

*Morbidity* means a diseased state. A statistic that reports, “50 cases of measles per 10,000 people living in the United States last year” is called a \_\_\_\_\_ rate.

145.  
 mortality (or death)  
 mor tal' i tē

*Mortality* means the state of being mortal and, therefore, subject to death. In other words, mortality is a statistic that reports the \_\_\_\_\_ rate.

146.  
 (all three are mortality statistics)

Which of the following examples expresses a mortality rate? Check each correct example.

- In 2008, 37,261 people were killed in automobile accidents on U.S. highways.
- In 2003–2004, malaria accounted for 52–78% of deaths in Ethiopia.
- Nearly 22,000 U.S. deaths are estimated in 2009 from leukemia.

147.  
 death

The mortality rate is the same as saying the \_\_\_\_\_ rate.

148.  
 sickness or disease

The morbidity rate is expressed as the number of cases of a specific disease found in a specific unit of population during a specific period of time. It shows the rate of \_\_\_\_\_.

149.  
 Which of the following examples is a morbidity rate? Check each correct example.

(the top one shows a morbidity rate)

- Between 2005 and 2007 there were less than 15 new cases of tuberculosis reported for every 100,000 people living in the United States.
- In 2009, there were 10.9 deaths from suicide for every 10,000 people in the United States.

morbidity rate

150.

A statistic that reports the number of cases of a disease in a specific population for a specific period of time is called \_\_\_\_\_

\_\_\_\_\_.

mortality rate

151.

A statistic that reports the death rate is called \_\_\_\_\_

\_\_\_\_\_.

Morbidity refers to the rate of illness; mortality refers to the death rate.

152.

What is the difference between a morbidity and a mortality statistic?

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

153.

In this chapter you worked with many new terms and learned to use some familiar words in new ways. Fifty of these words are listed here for you to practice your pronunciation and to review their meanings. Pronounce each term, think about its meaning, and then take the Chapter 7 Self-Test.

- |                                  |                                |
|----------------------------------|--------------------------------|
| acute (a kūt')                   | emesis (em' ə sis)             |
| anorexia (an o rek' sē ə)        | erythremia (er i thrē' mē ə)   |
| antipyretic (an tē pī ret' ik)   | generalized                    |
| asymptomatic (ā simp tō mat' ik) | hematemesis (hē mā tem' ə sis) |
| atrophy (at' rō fē)              | hyperpnea (h perp' nē ə)       |
| bradypnea (brad' ip nē ə)        | hyperpyrexia                   |
| central (sen' trul)              | (hī per pī rek' sē ə)          |
| Cheyne-Stokes respiration        | hypothermia                    |
| (chān-stōks)                     | (hī pō ther' mē ə)             |
| chlorocyte (klor' ō sīt)         | leukocyte (lōō' kō sīt)        |
| chronic (kron' ik)               | localized                      |
| cyanoderma (sī ə nō der' mä)     | malaise (mä lāz')              |
| diagnosis (dī ag nō' sis)        | melanocarcinoma                |
| dyspnea (disp' nē ə)             | (mel' ə nō kār sin ō' mä)      |
| edema (e dē' mä)                 | morbidity (mor bid' i tē)      |

---

mortality (mor tal' i tē)	pyrexia (pī rek' sē ə)
nausea (naw' zē ə)	respiration
palliative (pal' ē ə tiv)	symptom
paroxysmal (par ok sis' mal)	symptomatic
peripheral (per i' fer al)	syndrome (sin' drōm)
pneometer (nē om' ə ter)	systemic
polyarthritis (pol' ē arth rī' tis)	tachypnea (tak ip nē' ə)
prodromal (prō drō' mal)	temperature
prognosis (prog nō' sis)	tinnitus (ti nī' tus)
prophylactic (prō fi lak' tic)	vertigo (ver' ti gō)
pulse (puls)	vital signs
pyretolysis (pī ret ō lī' sis)	xanthopsia (zan thop' sē ə)

## Chapter 7: Self-Test

### Part 1

From the list on the right, select the correct meaning for each of the following medical terms.

- |                       |  |
|-----------------------|--|
| _____ 1. Diagnosis    | a. Pertaining to the whole body, all systems                           |
| _____ 2. Systemic     | b. Very fast breathing   |
| _____ 3. Morbidity    | c. Identification of an illness  |
| _____ 4. Pyretolysis  | d. Fluid in the tissues  |
| _____ 5. Edema        | e. Pertaining to disease rate statistic                                |
| _____ 6. Generalized  | f. Temperature, pulse, and respiration                                 |
| _____ 7. Anorexia     | g. Reduction of fever  |
| _____ 8. Vertigo      | h. A sickness of the stomach; desire to vomit                          |
| _____ 9. Hyperpnea    | i. Pertaining to the whole body, many different parts at the same time |
| _____ 10. Malaise     | j. Wasting away, or underdevelopment                                   |
| _____ 11. Paroxysm    | k. Loss of appetite  |
| _____ 12. Vital signs | l. Sensation of turning around in space                                |
| _____ 13. Syndrome    | m. Vague sensation of not feeling well                                 |
| _____ 14. Nausea      | n. Pertaining to sudden periodic attack                                |
| _____ 15. Atrophy     | o. Symptoms occurring together   |

**Part 2**

Complete each of the medical terms on the right with the appropriate missing part. Some terms are missing all parts!

1. Ringing in the ear \_\_\_\_\_
2. Artery throbbing in time with the heartbeat \_\_\_\_\_
3. Respiratory arrest, not breathing \_\_\_\_\_
4. Outside surface of the body \_\_\_\_\_
5. Pertaining to preventing disease \_\_\_\_\_
6. Sudden recurring attack \_\_\_\_\_
7. Symptom-free \_\_\_\_\_
8. Breathing that reaches a climax, then ceases before beginning again C\_\_\_\_\_ -S\_\_\_\_\_ respiration
9. Pertaining to relieving symptoms but not the disease \_\_\_\_\_
10. Patient perceives change in body or functions \_\_\_\_\_
11. Prediction of course and outcome of a disease \_\_\_\_\_
12. Pertaining to severe symptoms, rapid onset, short course \_\_\_\_\_
13. Reddened skin \_\_\_\_\_
14. Subnormal body temperature under 90°F \_\_\_\_\_
15. Feverishness \_\_\_\_\_

**ANSWERS****Part 1**

1. c
2. a
3. e

**Part 2**

1. Tinnitus
2. Pulse
3. Apnea

- |       |                              |
|-------|------------------------------|
| 4. g  | 4. Peripheral                |
| 5. d  | 5. Prophylactic              |
| 6. i  | 6. Paroxysm                  |
| 7. k  | 7. Asymptomatic              |
| 8. l  | 8. Cheyne-Stokes respiration |
| 9. b  | 9. Palliative                |
| 10. m | 10. Symptom                  |
| 11. n | 11. Prognosis                |
| 12. f | 12. Acute                    |
| 13. o | 13. Erythroderma             |
| 14. h | 14. Hypothermia              |
| 15. j | 15. Pyrexia                  |



# **8** Growth and Development, and Body Orientation

*In this chapter you will work with terms relating to growth and development of an embryo and other kinds of growing things. You'll cover terms that provide an orientation to the body, something like a road map, to make anatomical descriptions meaningful.*

## **Mini-Glossary**

### **Root Words**

cyst	benign	distal
lesion	infiltration	dorsal
polyp	malignant	lateral
papilla	metastasis	medial
papilloma	neoplasm	proximal
papule		ventral

### **Prefixes**

ecto-, exo- ( <i>outer side</i> )	epi- ( <i>over, surrounding</i> )
end-, endo- ( <i>inner, within</i> )	sub-, hypo- ( <i>below, under</i> )
meso- ( <i>middle</i> )	supra-, super- ( <i>above, over</i> )
circum- ( <i>around</i> )	infra- ( <i>below, beneath</i> )
peri- ( <i>around about</i> )	

Have you completed the Chapter 7 Review Sheet? We suggest you do it before you begin. It will really help you learn.

## Growth and Development

1.

Blastos refers to a germ, seed, sprout, or bud. A *blastoderm* is an aggregation of cells showing the first trace of structure in a microscopic organism. It is the most rudimentary form of a developing embryo and is made up of three primary germ cell layers: the *ectoderm*, *endoderm*, and *mesoderm*. From these primordial germ layers the embryo develops and becomes a fetus.

2.

Review these definitions and return to them as you need help with the frames that follow.

Ectoderm is the outer layer of cells in the primary germ layers of the developing embryo. It is the origin of:

- the skin (epidermis)
- the mucous membranes of nose, mouth, and anus (epithelium)
- nervous tissue and sensory organs

Mesoderm is the middle of the three primary germ layers of the embryo. It is the origin of:

- all connective tissues
- all body musculature
- blood, cardiovascular, and lymphatic systems
- most of the urogenital system
- the lining of the pericardial, pleural, and peritoneal cavities

Endoderm is the innermost of the three primary germ layers of the embryo, from which are derived:

- the lining of the gut
- its glands (spleen, pancreas, liver)
- component structures of the gut (esophagus, stomach, intestine, colon)
- the respiratory tract

3. Ectoderm is the outer layer of cells. Endoderm is the innermost of the three germ layers. Mesoderm is the middle layer of three primary germ layers in the developing embryo. Write a meaning for each of the prefixes:

inner, inside  
middle  
outer, outside

endo- means \_\_\_\_\_.  
meso- means \_\_\_\_\_.  
ecto- means \_\_\_\_\_.

4. Which primary germ layer originates all connective tissues and all body musculature? \_\_\_\_\_

mesoderm  
mēz' ō derm

5. The pleura is a watery, mucoid-surfaced membrane enveloping the lungs and lining the walls of the thoracic cavity. From which germ layer does it arise? \_\_\_\_\_

mesoderm

6. Which of the three embryonic germ layers gives rise to the nervous system and the organs of special sense? \_\_\_\_\_

ectoderm  
ek' tō derm

7. The primitive gut tract and its associated glands (organs) develop from which germ layer of the embryo? \_\_\_\_\_

endoderm  
en' dō derm

8. The skin, including mucous membranes exposed to the environment, is derived from the primary germ layer called the \_\_\_\_\_.

ectoderm

9. The innermost of the three primary germ layers of the embryo is the \_\_\_\_\_. The outside layer of cells in the embryo is the \_\_\_\_\_. The middle of the three primary germ layers is the \_\_\_\_\_.

endoderm  
ectoderm  
mesoderm  
mēz' ō derm

10. Now let's try out those new prefixes. Write a meaning for each of the following:  
ectocytic \_\_\_\_\_  
\_\_\_\_\_

of, or pertaining to,  
outside the cell

inflammation of inside of the heart \_\_\_\_\_  
 examination by looking inside of (a body cavity) \_\_\_\_\_  
 examination of inside the bladder \_\_\_\_\_

ectogenous  
 ek toj' en us  
 originating or produced inside of (a cell)  
 en doj' en us

11.  
 Gen/o is the combining form to denote originating or production.  
 Ectogenous means originating outside of a cell or an organism.  
 Underline the part of the term meaning originating or produced.

Ectogenous \_\_\_\_\_  
 What does endogenous mean? \_\_\_\_\_

pregnancy outside of its normal location

12.  
*Topos, top/o* means place or location. Sometimes a pregnancy begins in the fallopian tube instead of within the uterus. A pregnancy can also implant in the gut, abdomen, cervix, or lining of the uterus. These atypical placement pregnancies are called ectopic pregnancies.

What is an ectopic pregnancy? \_\_\_\_\_

ectopic  
 ek top' ik

13.  
 A pregnancy beginning in the abdominal cavity instead of the womb is called an \_\_\_\_\_ pregnancy.

14.  
 Let's review before going on. From the suggested answers, select the best term for each brief definition.

- SUGGESTED ANSWERS:  
 ecto-, exo-            endo-, en-, end-  
 ectopic                endocranial  
 ectocytic              endogenous  
 meso-                    mesoderm

ecto- (exo-) \_\_\_\_\_  
 meso-            middle (prefix) \_\_\_\_\_

endo- (en- or end-)	inside (prefix) _____
mesoderm	middle germ cell layer _____
endogenous	originating inside _____
ectocytic	pertaining to outside the cell _____
ectopic	out of its normal place _____
endocranial	pertaining to inside the head _____

## Growths and Other Abnormal Tissues

15.

In this section you'll work with more terms relating to growth. Growing means to increase progressively in size. However, growth may be normal and purposeful, or abnormal and useless. Here are some terms used to describe abnormal growth.

16.

neoplasm  
nē' ō plazm

*Neo-* means new; *-plasm* means thing formed. Neoplasm is a new formation of tissue. It is abnormal because it serves no useful function and grows at the expense of a healthy body. Any tissue growing autonomously and that has no useful function is a \_\_\_\_\_.

17.

neoplasm

A tumor is a swelling or enlargement. It is an autonomous new growth of tissue. It is a mass of tissue without a function. Another word for tumor is \_\_\_\_\_.

18.

growth of tissue that serves no useful purpose

Neoplasm and tumor are interchangeable terms. They both mean an autonomous new \_\_\_\_\_.

19.

tissue examines

*Bio-* means life; *-opsy* means appearance, sight. A biopsy is removing tissue from a living body and examining it under a microscope.

To make a diagnosis, a physician usually biopsies a tumor or neoplasm. This means the physician removes a piece of living \_\_\_\_\_ and \_\_\_\_\_ it under a microscope.

20.

A neoplasm (tumor) growing in or on the human body can be classified as either malignant or benign.

*Malignant* means it's of a bad kind, growing worse, resisting treatment, and tending or threatening to produce death.

benign  
bē nīn'  
malignant  
ma lig' nant

*Benign* means it's mild, not spreading, not recurrent, and not malignant. Tumors may be of uncertain behavior, but usually are classified either as \_\_\_\_\_ or \_\_\_\_\_.

biopsy

21.  
To determine what kind of neoplasm a patient has, the physician removes a piece of the living tumor tissue and examines it under a microscope. What is this procedure called? \_\_\_\_\_

malignant

22.  
A biopsy report indicates a patient's abnormal growth is of a bad kind. It will grow worse, resist treatment, and tend to be life-threatening. The diagnosis is \_\_\_\_\_ neoplasm.  
(malignant/benign)

benign

23.  
A nonmalignant neoplasm is an abnormal tissue mass that does not spread, and is not likely to recur. The growth is \_\_\_\_\_.  
(malignant/benign)

biopsy

24.  
A procedure that determines whether a neoplasm is benign or malignant is a \_\_\_\_\_.

malignant

25.  
A benign neoplasm is mild, does not spread or recur, and is not \_\_\_\_\_.  
(the other kind)

infiltration

26.  
*Infiltration* means slipping into and between normal cells of the body. Malignant tumor cells may spread by slipping into and between normal body cells. Malignant cells multiply rapidly and take up nourishment and space, crowding out the normal cells. This method of spreading is called direct extension or \_\_\_\_\_.

27.  
*Metastasis* means movement of cells (especially cancer cells) from one part of the body to another.  
*Meta-* means after, beyond, among, over; *-stasis* means a standing, a location, or a place.

- metastasis  
me tas' tə sis
- Malignant tumor cells migrate to another location and take up a standing in another organ or part of the body. This method of spreading the disease is called invasion by \_\_\_\_\_.
- 28.
- location
- Metastasis is the movement of malignant tumor cells from the primary location over to another \_\_\_\_\_.
- 29.
- infiltration or direct extension
- There are two methods by which a malignant neoplasm spreads, grows larger, and becomes more threatening. Malignant cells may slip into and between normal cells. This is called \_\_\_\_\_.
- metastasis
- Or tumor cells may move beyond the primary site and take up a standing in another location of the body. This spreading method is called \_\_\_\_\_.
- 30.
- infiltration
- Unlike malignant neoplasms, benign growths do not spread by \_\_\_\_\_ or \_\_\_\_\_.
- metastasis
- 31.
- Here's a quick review. Select a term from the suggested answers that best fits each brief definition. Write your selection in the space provided.
- |                |                |
|----------------|----------------|
| malignant      | neoplasm/tumor |
| tumor/neoplasm | biopsy         |
| benign         | infiltration   |
| metastasize    |                |
- biopsy
- remove tissue for examination \_\_\_\_\_
- benign
- mild, not malignant \_\_\_\_\_
- neoplasm/tumor
- new, abnormal tissue mass \_\_\_\_\_
- tumor/neoplasm
- tissue mass, no useful purpose \_\_\_\_\_
- malignant
- abnormal growth that threatens death \_\_\_\_\_
- infiltration
- slipping into and between normal cells \_\_\_\_\_
- metastasize
- cells relocate to new location, organ \_\_\_\_\_
- (me tās' tə sīz)
- 32.
- There are many other terms that mean abnormal conditions, changes, or growths. Here are a few of the more common ones.

33.  
*Lesion* is an area of unhealthy (morbid) tissue, such as an injury, wound, burn, or infected patch of skin.
- lesion  
 lē' zhun
- Any morbid change in the structure of an organ or a body part due to injury or disease is called a \_\_\_\_\_.
34.  
 An infected finger is a lesion because there has been a morbid change in the finger tissues. What does morbid mean?  
 \_\_\_\_\_
- diseased, unhealthy
35.  
 In Alzheimer's disease there are morbid changes in brain tissue. These unhealthy changes in brain structure are also called \_\_\_\_\_.
- lesions
36.  
 An injury, a burn, and an infected finger are examples of lesions because the part of the body involved has undergone a \_\_\_\_\_  
 change. (unhealthy)
- morbid
37.  
 A lesion is any morbid change in the structure of an organ or part due to injury or disease. Check each item that is *not* a lesion.
- chicken pox is a disease; the pox are lesions
- duodenal ulcer
- skinned knees
- scalding burn of the hand
- abrasion of the elbow
- chicken pox
- infected toenail
38.  
 Poison ivy leaves may irritate the skin and cause blisters. These unhealthy changes in the structure of the skin are called \_\_\_\_\_.
- lesions
39.  
 Build a word meaning a hurt, an injury, or any unhealthy area of any organ or part: \_\_\_\_\_.
- lesion
40.  
 What does morbid mean? \_\_\_\_\_
- unhealthy, diseased



41.  
In earlier units you learned that cyst means bladder.

inflammation of the bladder Cystitis means \_\_\_\_\_.

examination of the inside of the bladder Endocystoscopy means \_\_\_\_\_.

excision (or removal) of the gallbladder Cholecystectomy means \_\_\_\_\_.

42.  
Cyst also means a closed sac or pouch that contains fluid, semifluid, or solid material.

sac or pouch A cyst is a closed \_\_\_\_\_.

fluid, semifluid, or solid material It contains \_\_\_\_\_.



Figure 8.1 Cyst

43.  
A malfunctioning ovary may develop a closed sac or pouch containing fluid. This is called an ovarian \_\_\_\_\_.

cyst

44.  
What is a hydrocyst? \_\_\_\_\_

a cyst containing fluid (water)

Cyst means \_\_\_\_\_.

a sac that contains fluid or even solid material

45.  
A physician doesn't usually drain a cyst of its contents because it would only fill again. Instead, a surgeon completely excises the cyst. Write a term meaning surgical removal of a cyst: \_\_\_\_\_.

cystectomy

pol' ip  
malignant

46.  
*Polyp* is a tumor with a little foot, or stem. A polyp is usually a benign tumor. That means it is not \_\_\_\_\_,  
(the other kind)

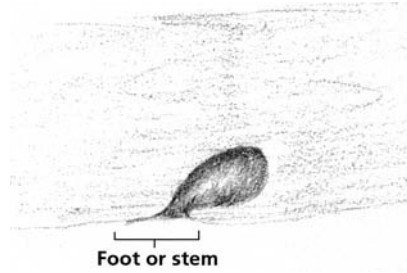


Figure 8.2 Polyp

slowly  
infiltration  
metastasis

it grows \_\_\_\_\_,  
(fast/slowly)  
\_\_\_\_\_ or \_\_\_\_\_.

foot

47.  
A polyp is a specific type of tumor or neoplasm. It's an abnormal, useless new growth that stands on a stem or a little \_\_\_\_\_.

polypectomy

48.  
Vascular organs such as the nose, uterus, and rectum commonly develop polyps. Polyps bleed easily and usually are removed surgically. Build a word for excision of polyps: \_\_\_\_\_.  
What does vascular mean? This is a good time to use a dictionary.  
\_\_\_\_\_

unhealthy

49.  
A lesion is an area of \_\_\_\_\_ tissue.

burn, injury, infection

Give some examples of lesions: \_\_\_\_\_  
\_\_\_\_\_.

bladder  
a sac containing fluid or  
semifluid

50.  
Cyst has two different meanings.  
Cyst means \_\_\_\_\_.  
a part of the body  
Cyst also means \_\_\_\_\_.  
definition

tumor/neoplasm  
little foot, or stem

51.  
A polyp is a specific kind of \_\_\_\_\_.  
A polyp has a \_\_\_\_\_.

52.  
*Papilla* is a small nipplelike protuberance or elevation. It may be located anywhere on the body, and may be normal or abnormal.

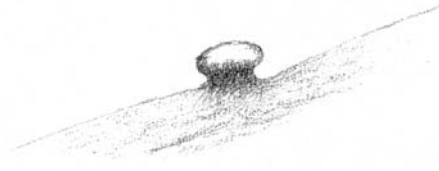


Figure 8.3 Papilla

small, nipplelike  
structures

Taste buds are small nipplelike structures on the surface of the tongue. They account for the four fundamental taste sensations: sweet, bitter, sour, and salt. Stand in front of a mirror; stick your tongue way out. You will see papillae (plural) on the back of your tongue. Describe them: \_\_\_\_\_.

papilla  
pa pil' ə

53.  
The nipple of the mammary gland (breast) is called a mammary \_\_\_\_\_.

pap i lō' mä  
nipplelike

54.  
*Papilloma* is a hypertrophied papilla covered by a layer of skin. What is the shape of a papilloma?  
\_\_\_\_\_

pap' yōōl

55.  
*Papule* is a pimple. It's a red elevated spot on the skin. It's solid and circumscribed. Papular lesions appear on the skin in smallpox, measles, and chicken pox.

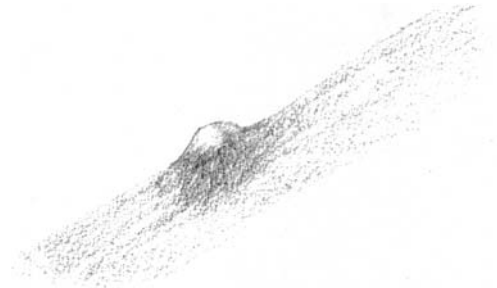


Figure 8.4 Papule

spots They are elevated red \_\_\_\_\_ on the skin.

circumscribed They are solid and \_\_\_\_\_.

56.

*Excrescence*: ex means out; *crescence* means to grow. Excrescence is a useless structure growing out of the surface of a part such as a wart or mole.

excrescence  
eks kres' ens

The Wicked Witch of the West had a big wart growing on the tip of her nose. A medical term for this disfiguring outgrowth is \_\_\_\_\_.



Figure 8.5 Excrescence

57.

*Condyloma* is a wartlike growth of the skin, occurring in the genital area. The main difference between an excrescence and a condyloma is where the lesion is located. An excrescence may appear anywhere on the surface of the body (even on the end of your nose).

kon di lō' mā  
condyloma

But a wartlike skin growth in the genital area is called a \_\_\_\_\_.

58.

An excrescence, a papilloma, a condyloma, and a papule are all lesions of the skin. That means the area of the skin involved is considered \_\_\_\_\_.

morbid, unhealthy

59.

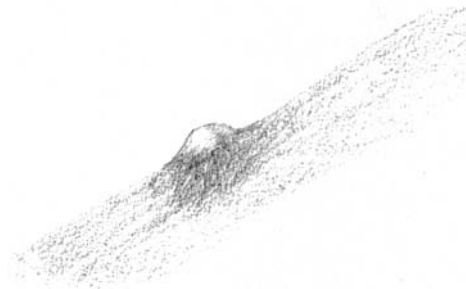
Papillae (plural) may be normal structures on the body that have important functions. A taste bud is a papilla. Describe what it looks like: \_\_\_\_\_.

pa pil' ē (pl.)  
small, nipplelike  
protuberance

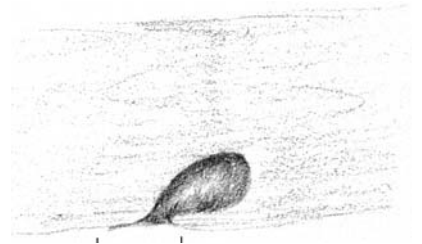
(For help in learning the plural forms, see Appendix B: Forming Plurals.)

60.  
Label each of the following illustrations.

- a. papule
- b. polyp



a. \_\_\_\_\_

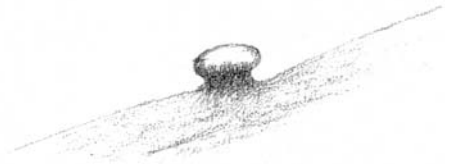


b. \_\_\_\_\_

- c. cyst
- d. papilloma



c. \_\_\_\_\_



d. \_\_\_\_\_

Figure 8.6 Abnormal Tissues

61.  
Complete each definition.

SUGGESTED ANSWERS:

- |             |           |
|-------------|-----------|
| papillae    | condyloma |
| excrescence | lesion    |
| polyp       | papule    |
| cyst        |           |

- lesion (lē' zhun)
- polyp (pol' ip)
- condyloma  
(kon di lō' mā)
- cyst (sist)
- excrescence  
(eks kres' ens)
- papillae (pa pil' ē)
- papule (pap' yōōl)

area of unhealthy (morbid) tissue \_\_\_\_\_

tumor on a stem or little foot \_\_\_\_\_

wartlike growth in the genital area \_\_\_\_\_

bladder, or a closed sac with fluid \_\_\_\_\_

useless outgrowth, like a wart \_\_\_\_\_

nipplelike protuberances \_\_\_\_\_

small, elevated red lesion on the skin \_\_\_\_\_

62.

Here's an independent learning exercise for you. These are words related to treatments and consequences of malignant neoplasms. Look up each one in your medical dictionary. Explore it thoroughly; pronounce it several times. Then write a brief definition for each. Do this exercise even if you think you know what the terms mean. Sometimes you'll be surprised!

abdominal paracentesis

---

---

alopecia

---

---

anastomosis

---

---

cauterization

---

---

chemotherapy

---

---

dehiscence

---

---

necrobiosis

---

---

radiation

---

---

radical resection

---

---

## Orientation

63.

Neoplasms, cysts, and lesions occur anywhere on the surface of the body and inside, under, and around organs and structures. Health care providers use specific terms to describe where lesions and other morbid conditions are located relative to parts of the body. This assists other providers in following a condition through treatment.

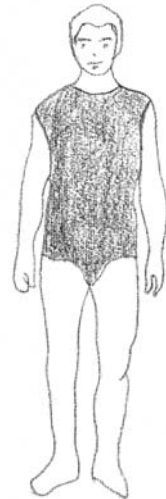
64.

*Ventral* means on or near the belly, or the side of the body where the belly is located.

back

*Dorsal* is the opposite of ventral; it means on or near the \_\_\_\_\_.

Label the illustrations.



- a. dorsal
- b. ven' tral
- ven' tral

a. \_\_\_\_\_

b. \_\_\_\_\_

**Figure 8.7**

65.

Ventral, ventr/o means on or near the \_\_\_\_\_.

Dorsal, dors/o means on or near the \_\_\_\_\_.

belly  
back

66.  
Try these.

backache

Dorsalgia means \_\_\_\_\_.

incision into the belly

Ventrotomy means \_\_\_\_\_.

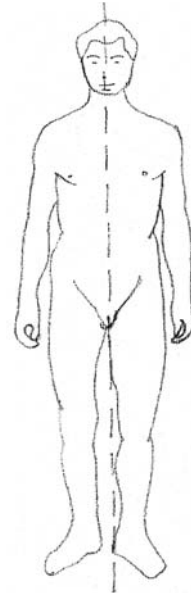
of or pertaining to belly  
to back

67.  
What do you think ventrodorsad means? \_\_\_\_\_  
\_\_\_\_\_

ventrodorsad  
ven trō dor' sād

A bullet penetrated the abdominal wall, traveled through the belly,  
and exited through the back. The bullet's path may be described as  
\_\_\_\_\_.

68.  
The *midline*, or median, is an imaginary line dividing the body into  
right and left halves.



**Figure 8.8** Midline of the Body

*Lateral* means farther from the midline.

*Medial* means closer to the midline.

closer

Medial means \_\_\_\_\_ to the midline.

nipple

Which is nearer the midline, your shoulder or your nipple?  
\_\_\_\_\_



69.  
lateral Which corner of your eye is nearest your ear? \_\_\_\_\_  
(medial/lateral)
- medial Which side of your knee knocks the other knee? \_\_\_\_\_  
(medial/lateral)
70.  
farther Lateral means \_\_\_\_\_ from the midline.  
closer Medial means \_\_\_\_\_ to the midline.  
on the midline Where is your umbilicus located? \_\_\_\_\_
71.  
nearest Let's describe a relative position in another way. *Distal* means remote, or farthest, from the point of attachment to the trunk.  
*Proximal* means the opposite. Proximal means \_\_\_\_\_ to  
(farthest/nearest) the point of attachment to the trunk.
72.  
hand Which is distal, your elbow or your hand? \_\_\_\_\_  
proximal On which end of your finger do you wear a ring? \_\_\_\_\_  
(distal/proximal)
73.  
distal Your forearm bone has two ends. Your hand is attached to the \_\_\_\_\_ end.  
(distal/proximal)
- proximal Your upper arm is located on the \_\_\_\_\_ end.  
(distal/proximal)
74.  
proximal A part of the body located nearest its attachment to the trunk is described as \_\_\_\_\_.
- distal A part located farthest from its attachment to the trunk is described as \_\_\_\_\_.
75.  
farthest from the attachment to the trunk The fingers are distal to all other parts of the arm. What does distal mean? \_\_\_\_\_  
\_\_\_\_\_

nearest to the attachment to the trunk

76. Describe the location of a part that is proximal:  
 \_\_\_\_\_  
 \_\_\_\_\_.

77. Here's a review of what you just covered. Select the best term from the suggested answers to complete each definition.

SUGGESTED ANSWERS:

- distal                      proximal
- medial                     lateral
- ventral                    midline
- dorsal

dorsal                      near or on the back \_\_\_\_\_

ventral                    near or on the belly \_\_\_\_\_

midline                   divides body into right and left halves \_\_\_\_\_

lateral                    farther from the midline \_\_\_\_\_

medial                    nearer to the midline \_\_\_\_\_

distal                    farthest from the attachment to the trunk \_\_\_\_\_

proximal                nearest to the attachment to the trunk \_\_\_\_\_

78. Here are some prefixes indicating place or relative position:

*Peri-*, *circum-* means around, about, surrounding,

Write a meaning for each of the following:

pertaining to around the tonsil                      Peri/tonsillar \_\_\_\_\_  
 \_\_\_\_\_

relating to around the belly button                      Peri/umbilical \_\_\_\_\_  
 \_\_\_\_\_

79. What is peri/dent/al (peri/dont/al) gum disease? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

around                    Peri- means \_\_\_\_\_.

around 80. Circum- is another prefix meaning \_\_\_\_\_. *Duct/ion* means moving.

moving around Ab/duct/ion is moving away. Circum/duction means \_\_\_\_\_.

circum(-scribed) 81. A wheal (hives) is a round patch of unhealthy skin with a ring of normal tissue at its circumference. A wheal appears as a round red spot. We usually say a wheal is \_\_\_\_\_-scribed.

circumscribed 82. A boil also has an outer limit where the circumference of the lesion becomes normal. Because it appears to have a border around its circumference, you may also describe a boil as a \_\_\_\_\_ lesion.

relating to around the mouth 83. Perioral and circumoral have the same meaning. Write the meaning: \_\_\_\_\_.

pertaining to around or surrounding the kidney Write a meaning for circumrenal, perirenal: \_\_\_\_\_.

84. Look over the following terms and their meanings and then complete the frames that follow. Come back to this frame whenever you need help.

<i>epi-</i>	upon, over (surrounding or covering)
<i>extra-</i>	without, outside of
<i>infra-</i>	below, beneath, under
<i>sub-, hypo-</i>	below, beneath, less than normal
<i>supra-, super-</i>	above, superior, in the upper part of

85. The epi/gastric region is the region of the belly over or upon the stomach. Refer to Figure 8.9 on page 189.

pain in the area of the belly over the stomach Epi/gastralgia means \_\_\_\_\_.

hernia in the area of  
the belly over the  
stomach

Epi/gastrocele means \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.

the skin (that covers the  
entire body)

86.  
Epi/cranium refers to the tissues (muscle and skin) that cover and surround the cranium. What do you think epi/dermis means? \_\_\_\_\_  
\_\_\_\_\_.

without, outside of  
outside the uterus  
outside the edges or  
outer limits of a  
structure or organ

87.  
Go back to the definitions in Frame 84. The prefix extra- means \_\_\_\_\_.  
Extra/uterine means \_\_\_\_\_.  
Extra/marginal means \_\_\_\_\_  
\_\_\_\_\_.

below, beneath, under  
pertaining to an area  
under, below the  
kneecap

88.  
Again use the definitions to help you. The prefix *infra-* means \_\_\_\_\_.  
*Patella* means kneecap. What does infra/patellar mean? \_\_\_\_\_  
\_\_\_\_\_.

beneath, under the  
kneecap

Sub/patellar means \_\_\_\_\_  
\_\_\_\_\_.

infra (-mammary)  
sub (-mammary)  
below the breast

89.  
Infra- and sub- usually are interchangeable terms. Complete the alternate terms and write a meaning:  
\_\_\_\_\_ -mammary  
\_\_\_\_\_ -mammary  
meaning \_\_\_\_\_.

under the tongue  
under the tongue

90.  
Sub- and hypo- are often interchangeable also.  
Sub/lingual means \_\_\_\_\_.  
Hypo/glossal means \_\_\_\_\_.

below, beneath, less than normal  
 infra-  
 hypo-

91. The prefix sub- means \_\_\_\_\_. What other two prefixes often are interchangeable and mean the same thing as sub- ? \_\_\_\_\_ and \_\_\_\_\_.

pertaining to below the breastbone

92. Sternum is the breastbone. Write a meaning for sub/sternal: \_\_\_\_\_.

infrasternal

Use another prefix and build another term that means the same thing: \_\_\_\_\_.

suprasternal

93. Build a term that means pertaining to above the sternum: \_\_\_\_\_.

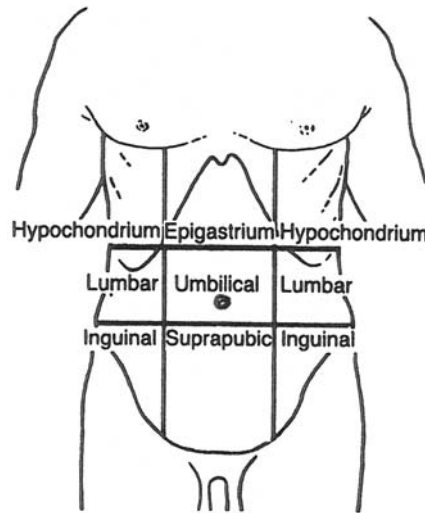


Figure 8.9 Regions of the Abdomen

94. Refer to Figure 8.9 to help you complete the next few frames.

95. Sub/pubis refers to an area beneath the pubic arch (bone). Build a term meaning relating to the area above the pubic arch: \_\_\_\_\_.

suprapubic

umbilicus or belly button

Umbilical is the term meaning relating to the area that is near/ around the \_\_\_\_\_.

beneath the ribs (these floating ribs are composed mostly of cartilage)

96.  
Chondros means cartilage (of ribs). Literally, hypochondrium means the area \_\_\_\_\_.

inguinal  
ing' gwi nal

97.  
Look at Figure 8.9, Regions of the Abdomen. Lumbar relates to the loin. It is the part of the back and sides between the ribs and the pelvis. What area is below the lumbar region? \_\_\_\_\_

When describing regions of the abdomen that occur on both sides, you may say left or right to discriminate. Use the client as a point of reference, that is, the client's left side lumbar region is called left lumbar.

pertaining to around the umbilicus

98.  
Write a meaning for each of the following terms.

peri/umbilical \_\_\_\_\_

relating to below the abdomen

sub/abdominal \_\_\_\_\_

relating to above the loin

supra/lumbar \_\_\_\_\_

pertaining to below the pubic arch

infra/pubis \_\_\_\_\_

pertaining to around the intestine

circum/intestinal \_\_\_\_\_

pertaining to under the skin

hypo/dermic \_\_\_\_\_

relating to outside the field of vision

extra/visual \_\_\_\_\_

pertaining to over the stomach

epigastric \_\_\_\_\_

99.  
In this chapter you worked with 36 new medical terms. Practice pronouncing them. Then take the Chapter 8 Self-Test.

benign (bē nīn')

circumocular  
circumscribed

---

condyloma (kon di lō' mā)	lumbar
cyst (sist)	malignant (ma lig' nant)
distal	medial
dorsal	mesoderm (mēz' ō derm)
ectoderm (ek tō derm)	metastasis (me tas' ta sis)
ectopic (ek top' ik)	neoplasm (nē ō plazm)
endocystoscopy (en dō sis tos' ko pē)	papilla (pa pil' ə)
endogenous (en doj' ə nus)	papilloma (pap i lō' mā)
epigastric (ep ē gas' trik)	papules (pap' yōōls)
excrecence (eks kres' ens)	periumbilical (per' ē um bil' i k'l)
extrasensory (eks tra sen' sō rē)	polyp (pol' ip)
hypodermic (hī pō derm' ik)	proximal (prox' si mal)
infiltration	subpatellar (sub pa tel' ar)
inframammary (in fra mam' ə rē)	suprapubic (su pra pyōō' bik)
lateral	tumor
lesion	ventral

## Chapter 8 Self-Test

### Part 1

From the right, select the correct meaning for each of the following often-used medical terms.

- |                         |  |
|-------------------------|--|
| _____ 1. Endocystoscopy | a. Farthest point from trunk attachment    |
| _____ 2. Lesion         | b. Outside layer of germ cells             |
| _____ 3. Circumocular   | c. Not spreading, not malignant            |
| _____ 4. Distal         | d. Pertaining to inside the head vault     |
| _____ 5. Endocranial    | e. Pertaining to around the eye            |
| _____ 6. Epigastric     | f. Slipping into and between normal cells  |
| _____ 7. Biopsy         | g. Pertaining to the area over the stomach |
| _____ 8. Neoplasm       | h. Cells spread to new location, organ     |
| _____ 9. Ectoderm       | i. Removal of tissue for examination       |
| _____ 10. Metastasis    | j. New, abnormal tissue formation          |
| _____ 11. Malignant     | k. Morbid tissue                           |
| _____ 12. Benign        | l. Nearest the attachment to the trunk     |
| _____ 13. Infiltration  | m. A bad kind, tending to threaten death   |
| _____ 14. Proximal      | n. Occurring outside the normal place      |
| _____ 15. Ectopic       | o. Examination inside the bladder          |



**Part 2**

Write the medical term for each of the following brief definitions.

1. Nipple-like protuberance \_\_\_\_\_
2. New, abnormal tissue without a purpose \_\_\_\_\_
3. Useless structure growing out of the skin (wart) \_\_\_\_\_
4. Spread of malignant cells to new location, organ \_\_\_\_\_
5. Pertaining to on or near the back \_\_\_\_\_
6. Farthest point from trunk attachment \_\_\_\_\_
7. Closed sac or pouch containing fluid \_\_\_\_\_
8. Removal of tissue for examination \_\_\_\_\_
9. Wartlike growth in the genital area Con\_\_\_\_\_
10. Slipping into and between normal cells \_\_\_\_\_
11. Not spreading, not malignant \_\_\_\_\_
12. Below the mammary gland \_\_\_\_\_
13. Tumor with a little foot \_\_\_\_\_
14. Nearest point of trunk attachment \_\_\_\_\_
15. Unhealthy, diseased area of tissue \_\_\_\_\_

**ANSWERS**

**Part 1**

1. o
2. k
3. e
4. a
5. d
6. g
7. i
8. j
9. b

**Part 2**

1. Papilla
2. Neoplasm/tumor
3. Excrescence
4. Metastasis
5. Dorsal
6. Distal
7. Cyst
8. Biopsy
9. Condyloma

- |       |                  |
|-------|------------------|
| 10. h | 10. Infiltration |
| 11. m | 11. Benign       |
| 12. c | 12. Inframammary |
| 13. f | 13. Polyp        |
| 14. l | 14. Proximal     |
| 15. n | 15. Lesion       |

# **9** **Gynecology, Pregnancy, and Childbirth**

*This chapter covers medical terms used in gynecology, pregnancy, and childbirth. This lesson may be difficult at times, so be kind to yourself and go slowly. If you don't get the right answers the first time you work through a sequence, try again before moving on. Here are the whole terms, word roots, prefixes, and suffixes you'll work with.*

## **Mini-Glossary**

### **Root Words**

amni/o, amniot/o (*fetal sac*)

gravid/a (*with child*)

gyn/o, gynec/o (*woman*)

hyster/o (*uterus*)

mamm/o (*breast*)

mast/o (*breast*)

men/o (*menses, menstruation*)

metr/o (*uterus*)

para (*bear, bring forth*)

### **Prefixes**

multi- (*many*)

nulli- (*none*)

oligo- (*little, small, scanty*)

post- (*after*)

pre- (*before*)

primi- (*first*)

secundi- (*second*)

### **Suffixes**

-ary (*of or pertaining to*)

-atrophy (*undernourished, wasting*)

-dynia (*pain, painful*)

-mania (*madness*)

-pathy (*disease*)

-phobia (*excessive fear*)

### **Important Words**

climacteric

conception

embryo

episiotomy

fetus

gestation

involution	perineum
labor	peritoneum
menopause	placenta
ovum	pudenda
parturition	puerperium

Do yourself a big favor. Complete the Review Sheet for Chapter 8 before you tackle this unit.

## Terms of Gynecology

women

1. *Gyn, gynec/o* means woman. Gynecology is the study of the female reproductive organs and breasts. Simply put, it is the field of medicine dealing with diseases of whom? \_\_\_\_\_

Before continuing, go to Figure 4.2, The Female Reproductive Organs. Review the illustration and read again the description that follows.

*gī' nō plas tē or jin' ō plas tē*  
 plastic surgery of female reproductive organs

2. *Gyn/o/pathic* means pertaining to diseases of female reproductive organs. What do you think *gyn/o/plasty* means? \_\_\_\_\_

*gī ne fo' bē a*  
 fear of women

3. *Mania* means madness. *Phobia* means excessive fear. Gynecomania is an abnormal sex drive and desire in the male of the species. What do you think *gyne/phobia* means? \_\_\_\_\_

gynecologist  
*gī ne kol' ō jist*

4. The physician who specializes in female disorders is called a \_\_\_\_\_.

breast

5. Human beings are mammals. Mammals have glands that secrete milk for nourishing their offspring. In plain English, mammary gland refers to \_\_\_\_\_.

6. These next two terms often are interchangeable. However, we use one term more often than the other. In this lesson you'll be using the *preferred terms*. Let's see what this means:

breast	<i>Mamm</i> , <i>mamm/o</i> refers to mammary gland, or breast; <i>mast</i> , <i>mast/o</i> also refers to _____.
mam ī' tis, mast ī' tis inflammation of the mammary gland (breast) preferred	7. Mamm/itis and mast/itis both mean _____ _____ Mastitis is the term used most often, so we say it is the _____ term.
ma mog' ra fē mamm/o/graphy X ray exam of the breast	8. Break down each of the following preferred terms and write its meaning. Mammography, _____ / _____ / _____, means _____ _____.
mas tek' tō mē mast/ectomy surgical removal of a breast	Mastectomy, _____ / _____, means _____ _____.
mastotomy mas tot' ō mē incision into the breast	9. Using the word root or combining form, mast, mast/o, add a suffix from the list and build a preferred term. Write its meaning in the space provided. -otomy      -itis      -pathy m _____ means _____ _____
mastitis inflammation of the breast	m _____ means _____ _____
mastopathy mas top' a thē disease of the mammary gland	m _____ means _____ _____
mastoptosis mas top tō' sis	10. Very large breasts that hang down, or droop, are described as pendulous. The suffix for hanging or drooping is -ptosis. Construct a word meaning pendulous breast: _____.

gī ne kō mas' tē a  
woman's breast

11.  
Here's an interesting term that doesn't follow the rules. Let's look at the parts. Gynec/o means woman; mastia means breast.

Gynecomastia literally means \_\_\_\_\_.

In actual use it means abnormally large mammary glands in the male; sometimes they secrete milk.

mam' ō gram  
mammogram  
X ray picture of the  
breast

12.  
This time use mamm, mamm/o. Build a term with each of the following suffixes and write its meaning:

-gram            -ary  
m \_\_\_\_\_  
means \_\_\_\_\_  
\_\_\_\_\_

mam' a rē  
mammary  
pertaining to the  
mammary gland

m \_\_\_\_\_  
means \_\_\_\_\_  
\_\_\_\_\_

mam' ō plas tē  
plastic surgery of the  
mammary gland

13.  
Mamm/o/pey means surgical correction (fixation) of large hanging breasts. What does mamm/o/plasty mean? \_\_\_\_\_  
\_\_\_\_\_

mast' ad nī tis  
mast' ad nō' ma  
tumor of the mammary  
gland

14.  
Mast/aden/itis means inflammation of the mammary gland. Write a meaning for each of the following:

mastadenoma \_\_\_\_\_  
\_\_\_\_\_

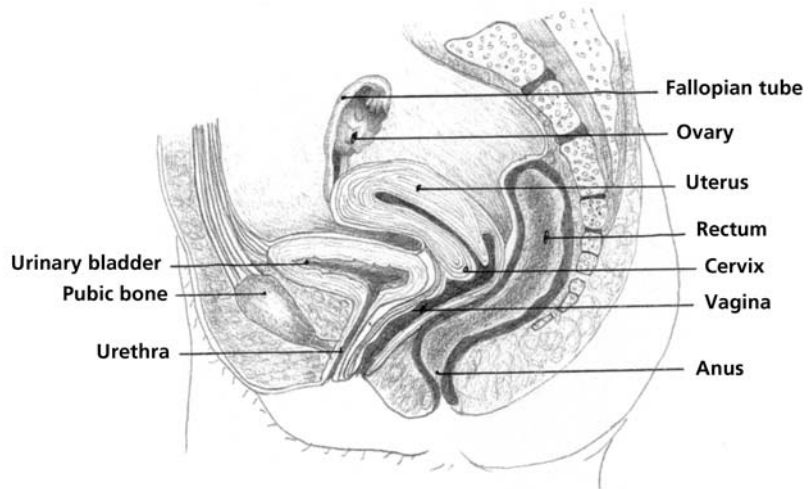
mas tō kar cin ō' ma  
cancerous tumor of the  
mammary gland

mastocarcinoma \_\_\_\_\_  
\_\_\_\_\_

mas tong' kus  
(any) tumor of the  
breast

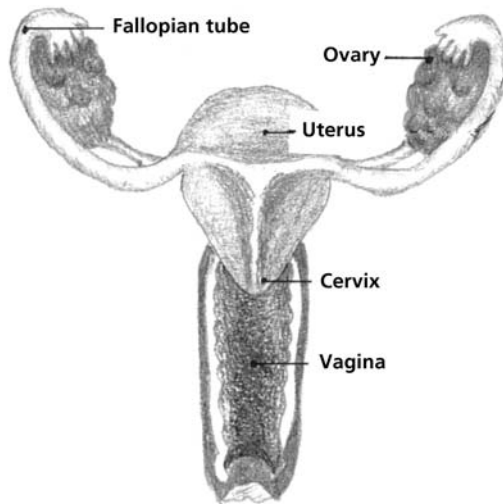
15.  
The study or science dealing with the physical, chemical, and biologic properties of neoplasms including causation, pathogenesis, and treatment is oncology. What does mastoncus mean? \_\_\_\_\_  
\_\_\_\_\_

16. Mast/o/dynia means painful breast. Using another suffix you know, build another word that also means pain in the breast:  
mast/\_\_\_\_\_.
- mast/algia  
mast al' jē ə
17. Here's a quick review. Select a term from the suggested answers that best fits each brief definition. Write your selection in the space provided.
- |                 |  |              |
|-----------------|--|--------------|
| mastopathy      | mastectomy                                   | mastopathy   |
| mas top' a thē  | mastoptosis                                  | gynecomastia |
| gynecomastia    | mastoncus                                    | mastopexy    |
| mastectomy      | disease of the mammary glands _____          |              |
| mastoptosis     | women's breasts (on a man) _____             |              |
| mastoncus       | surgical removal of the breast _____         |              |
| mastopexy       | pendulous breasts _____                      |              |
| mas' tō pex' sē | any tumor of the breast _____                |              |
|                 | surgical fixation of pendulous breasts _____ |              |
18. Now try these.
- |                           |   |                        |
|---------------------------|---|------------------------|
| mammography               | mammoplasty                                 | mammary                |
| mammalgia<br>(mastodynia) | mammology                                   | mammalgia (mastodynia) |
| mammology                 | mammography                                 | gynecophobia           |
| gynecophobia              | X ray study of the breast _____             |                        |
| mammary                   | painful breast _____                        |                        |
| mammoplasty               | science and study of the breast _____       |                        |
|                           | fear of women _____                         |                        |
|                           | pertaining to the breast _____              |                        |
|                           | surgical reconstruction of the breast _____ |                        |
19. Mamma mē' a, you're doing very well!



**Figure 9.1** The Female Reproductive Organs (Midline Section)

See pages 75–76 for a description of the female reproductive organs.



**Figure 9.2** The Female Reproductive Organs (Anterior View)

ovary (oophor/o)  
fallopian tube (salping/o)  
uterus (hyster/o, metr/o)  
uterine cervix (cerv/i)  
vagina (vagin/o)

breast (mamm/o, mast/o)  
menses (men/o)  
muscle (my/o)  
bladder (cyst/o)  
urethra (urethr/o)



20.

Here are two more terms with nearly identical meanings. Refer to Figures 9.1 and 9.2.

uterus

*Hyster, hyster/o* means uterus. *Metr, metr/o* also means \_\_\_\_\_.

21.

*Hyster/o* usually refers to the uterus as a whole organ. *Metr/o* usually refers to the tissues of the \_\_\_\_\_.

uterus

22.

There are exceptions to the rule, but in general *hyster/o* means the uterus as a \_\_\_\_\_ organ. *Metr/o* refers to the \_\_\_\_\_ of the organ.

whole tissues

23.

*Metr/itis* means an inflammation of the uterine tissues (linings, muscles, etc.). *Metr/o/paralysis* means paralysis of \_\_\_\_\_.

(muscle) tissues of the uterus

24.

*Hyster/o/tomy* means incision into the uterus (perhaps to remove a solid tumor). *My-, myo-* means muscle. What does *hyster/o/my/oma* mean? \_\_\_\_\_

muscle tumor of the uterus

25.

Using the word roots *hyster, hyster/o*, add a suffix from the list and build a new word. Write its meaning in the space provided:

-ectomy      -pathy

hysterectomy  
his ter rek' tō mē  
surgical removal of the uterus

h \_\_\_\_\_  
means \_\_\_\_\_

hysteropathy  
his ter op' ō thē  
disease of the uterus

h \_\_\_\_\_  
means \_\_\_\_\_

26.

Try it again using metr or metr/o. Build a term and then write its meaning:

-scope                      -itis  
 -atrophy (wasting away, diminishing in size)

metroscope  
 mēt' rō skōp  
 instrument for  
 examining the uterus

m \_\_\_\_\_  
 means \_\_\_\_\_

metritis mē trī' tis  
 inflammation of uterine  
 tissues

m \_\_\_\_\_  
 means \_\_\_\_\_

metratrophy  
 mē tra' trō fē  
 uterine tissue atrophy

m \_\_\_\_\_  
 means \_\_\_\_\_

27.

Use the word roots metr/, metr/o with the following suffixes to make a new word that fits each of the definitions:

-orrhagia means hemorrhage  
 -orrhea means flow or discharge

metrorrhagia  
 mē trō rā' jē ə

uterine hemorrhage \_\_\_\_\_;  
 discharge from the uterus (mucus or pus) \_\_\_\_\_.

metrorrhea  
 mē trō rē' ə

28.

Here are two suffixes that can be confusing:

-orrhexis means rupture (bursting open);  
 -ocele means hernia or rupture.

The difference between them is the degree of severity of the outcome; the first has a high mortality.

Build a term meaning ruptured uterus (ruptured during labor threatening the mother's life and perhaps the infant's):

hysterorrhexis  
 his' ter ō rek' sis

hyster\_\_\_\_\_.

Build a term meaning uterine hernia (to be repaired by a surgeon):

hysterocele  
 his' ter ō sēl

hyster\_\_\_\_\_.

29.

Endo/metr/ium refers to the inside lining of the uterus.  
Myo/metr/ium refers to the muscle layer of the uterus.

endo/myo/metr/itis  
en dō mī ō mē trī' tis

Build a term meaning inflammation of the inside lining and muscle layers of the uterus:

\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_.  
inside muscle uterus inflammation

30.

Two word roots and their combining forms refer to the uterus.  
They are \_\_\_\_\_ and \_\_\_\_\_.

hyster, hyster/o  
metr, metr/o

31.

The term meaning the whole organ is \_\_\_\_\_. The term referring to the tissues of the organ is \_\_\_\_\_.

hyster/o  
metr/o

32.

Now let's look at a uterine function. *Menses*, *men/o* means monthly flow of bloody fluid from the uterus. Menstruation is the function of discharging the menses. Men/o in any word should make you think of \_\_\_\_\_.

menstruation  
men strū ā' shun

33.

Men/orrh/ea means free flow of menses, also known as menstruation.  
Dys/men/orrh/ea means \_\_\_\_\_.

dis men ō rē' a  
difficult or painful  
menstruation

34.

Men/orrh/algia also means \_\_\_\_\_.

me nor al' jē a  
painful flow of menses

35.

Try this.

Men/o/metr/orrh/agia means \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.

men ō mē trō rā' jē ə  
excessive bleeding  
(hemorrhage) from  
the uterus during  
menstruation

36.

*Menopause* is a normal physiological condition of a mature woman. It's an event that ends a woman's menstrual life. This event marks the end of her childbearing period. It means the permanent cessation of \_\_\_\_\_.

menses  
men' sēs

37.  
 children Menopause means the permanent cessation of the menses. It marks the end of a woman's capability for bearing \_\_\_\_\_.

38.  
 cessation of menses, or menopause *Climacteric* is a *transitional period* of life sometimes called the change of life. It is a period between ages 45 and 60 when many changes take place in a woman's body. At the end of this transitional period, she no longer experiences menstruation and is no longer capable of bearing a child. The outcome of this transitional period is called \_\_\_\_\_.

menopause Climacteric is also called peri\_\_\_\_\_, or prior to menopause.

39.  
 complete cessation of menses menopause During the female climacteric a key physical change takes place. The ovaries permanently and irreversibly atrophy, ending the reproductive period.

This *transitional period* of life is called the climacteric. The outcome of this transition period is the \_\_\_\_\_, which means \_\_\_\_\_.

40.  
 climacteric *kli mak' ter ik* The *critical period* of life marking the beginning of the end of child-bearing and ending with the onset of menopause is called the \_\_\_\_\_.

41.  
 climacteric Men also experience a decline in sexual activity in their presenile years. This *change of life period* in a man is called the male \_\_\_\_\_.

42.  
 the climacteric Menopause ends the body's reproductive function. What word describes the transitional period of critical changes that ends in menopause? \_\_\_\_\_

43.  
 It's time to review the word combinations you've learned in this section. From the suggested answers, select a term to go with each definition. Write your selection in the space provided.

	hysteropathy	mammography
	mastodynia	gynecomastia
	metrorrhagia	endometritis
gynecomastia	woman's breast (in a male)	_____
hysteropathy	uterine disease	_____
mastodynia	painful breast	_____
endometritis	inflammation inside the uterus	_____
mammography	X ray examination of the breast	_____
metrorrhagia	uterine hemorrhage	_____

44.

Here are a few more.

SUGGESTED ANSWERS:

	hysterorrhexis	menorrhagia
	amenorrhea	climacteric (female)
	menopause	metratrophy
menopause	permanent cessation of menses	_____
amenorrhea	lack of menstruation (temporary)	_____
hysterorrhexis	rupture of uterus (during labor)	_____
climacteric (female)	change of life transition period	_____
menorrhagia	painful menstruation	_____
metratrophy	wasting (diminishing in size) of the uterus	_____

## Pregnancy and Childbirth

In this section you'll learn one term at a time. First you'll read a brief paragraph defining the new term. Then you'll answer questions and complete statements about it showing you understand what it means. Feel free to refer back to the paragraph as you work through the frames that follow.

*Conception* means fertilization. It's an event marked by penetration of the ovum (female egg cell) by a spermatozoon (male germ cell). Conception results in a fertilized ovum. Only a fertilized ovum develops into a human being.

- fertilization or  
conception 45.  
Penetration of the female egg cell by the male germ cell is known as \_\_\_\_\_.
- ovum 46.  
Another term for female egg cell is \_\_\_\_\_.
- spermatozoon  
(sper' ma tō zō' on) 47.  
A term meaning male germ cell is \_\_\_\_\_.
- conception 47.  
Union of an ovum and a spermatozoon is called \_\_\_\_\_.
- fertilized  
A child will develop from an ovum only if the ovum is \_\_\_\_\_.
- Gestation* is the period from conception to childbirth during which an ovum passes through several stages of development on the way to becoming a newborn infant. Gestation lasts 280 days from the last menstrual period.
- pregnancy 48.  
Gestation is another word for the condition known as \_\_\_\_\_.
- gestation  
jes tā' shun 49.  
Pregnancy is the condition of a female after conception until the birth of the baby. Pregnancy is another word for the period of time called \_\_\_\_\_.
- 280 49.  
Gestation is the process of developing an ovum into a child. It takes \_\_\_\_\_ days.
- gestation  
pregnancy 50.  
An ovum develops into a child during a period from conception to birth. This process is called \_\_\_\_\_ and the condition is called \_\_\_\_\_.
- gestation 51.  
During pregnancy an ovum passes through many developmental stages or phases. Taken together, these phases make up the nine-month period called \_\_\_\_\_.
- The earliest gestational phase begins with a fertilized female egg cell. In just two weeks, the ovum divides into two cells, and each cell continues halving until it has become a complex mass of cells.

This mass of cells is now called an *embryo*. It's a living organism ready to continue its development into the next phase.

conception

52. The indispensable event that initiates a pregnancy is \_\_\_\_\_.

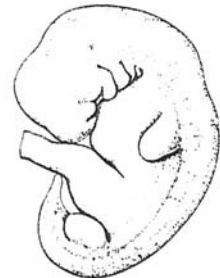
ovum  
ō' vum  
two

53. After conception, the earliest phase of development begins with a fertilized \_\_\_\_\_ and lasts \_\_\_\_\_ weeks.

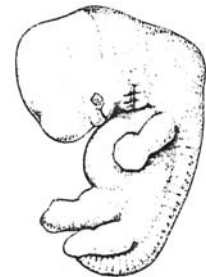
embryo  
em' brē ō

54. The first two weeks of gestation produce a complex living organism called a/an \_\_\_\_\_.

The *embryo* begins a second stage of gestation in the third week, which lasts six weeks. In the third week, the embryo begins to acquire structure (head, arms, legs, and a tail), and over the next few weeks it begins forming principal internal organs and body systems. By the end of the eighth week of gestation the embryo looks somewhat like a human and is called a *fetus*.



5 Weeks



6 Weeks



8 Weeks

**Figure 9.3** Embryos at 5, 6, and 8 Weeks

embryo

55. The second stage of gestation begins with a two-week-old ovum, which is now called an \_\_\_\_\_.

third

56. The embryo begins its second stage of development in the \_\_\_\_\_ week of gestation and continues

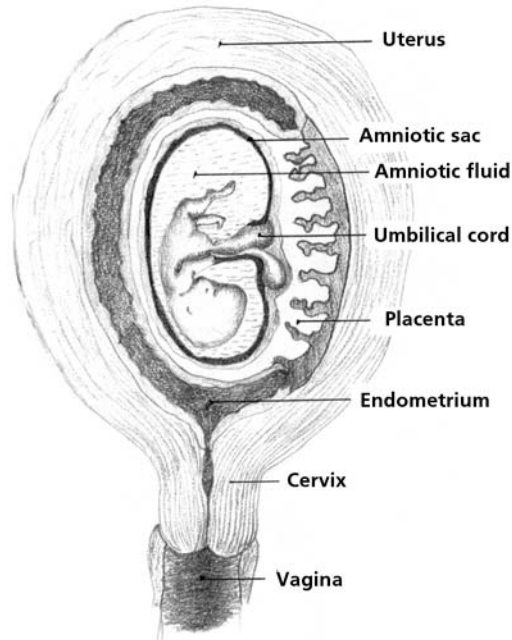
eighth

through the \_\_\_\_\_ week of a new pregnancy. At the beginning of the ninth week, it is called a \_\_\_\_\_.

fetus

- organs
57.  
During this second gestational phase the embryo begins forming arms and legs and principal internal \_\_\_\_\_.
- human being  
fetus  
fē' tus
58.  
By the beginning of the ninth week, the embryo begins to resemble a \_\_\_\_\_ and is called a \_\_\_\_\_.
59.  
A *fetus* begins the last phase of gestation. A fetus is a live offspring while it is in the mother (in utero). It continues developing during the remainder of the gestational period. The fetal stage lasts from the beginning of the third month of gestation to childbirth. A fetus sufficiently developed to sustain life outside the uterus is called a *viable* fetus.
- viable fetus
- In the last gestational phase, the fetus in utero develops into a \_\_\_\_\_.
- at three months of pregnancy
- When does this phase begin? \_\_\_\_\_
- seven more months
- How long does it last? \_\_\_\_\_
- childbirth
- What is the terminating event? \_\_\_\_\_
60.  
Here's a quick review.
- Penetration of an ovum by a spermatozoon is called \_\_\_\_\_.
  - A nine-month period during which a fertilized ovum becomes a child is called \_\_\_\_\_.
  - In the first two weeks of pregnancy an ovum becomes a complex organism called an \_\_\_\_\_.
  - From the third week to the beginning of the ninth week of pregnancy an embryo develops rudimentary appendages and internal \_\_\_\_\_.
  - After only two months' gestation, the embryo begins to resemble \_\_\_\_\_ and is called a \_\_\_\_\_.
  - A fetus developing in utero for the next seven months becomes a \_\_\_\_\_.
  - Gestation ends with \_\_\_\_\_.
- conception
- pregnancy or gestation
- embryo
- organs
- a human being  
fetus
- human being or child  
childbirth





**Figure 9.4.** Fetus in Utero, Beginning 9th Week

uterus (hyster/o, metr/o)

amniotic sac (amni/o, amniot/o)

amniotic fluid (liquor amnii)

61.

Here are a few medical terms referring to some structures and conditions relating to pregnancy. *Amnion*, *amni/o*, *amniot/o* refer to a thin transparent sac containing the fetus and the fluid surrounding the fetus. This sac grows rapidly as the fetus inside develops. The amniotic fluid protects the fetus from injury and helps maintain an even temperature.

Within the amniotic sac the fetus is protected from injury and changes in temperature by the *liquor amnii*, or in other words,

amniotic fluid  
am nē ot' ik flū' id

\_\_\_\_\_.

62.

Amniot/itis means inflammation of the amnion. Build a word that means pertaining to the sac that envelops the fetus: \_\_\_\_\_.

amniotic

am' nē ō sen tē' sis  
puncturing the amniotic  
sac and withdrawing  
some fluid

63.

The suffix *-centesis* means to puncture a cavity and remove fluid. Explain the meaning of *amni/o/centesis*: \_\_\_\_\_.

\_\_\_\_\_.

am' nē ō tōm  
usually an ultrasound  
graphic study of  
the amnion (and its  
contents)

64.

Amni/o/tome is an instrument for cutting (puncturing) the  
amnion. What does amni/ography mean? \_\_\_\_\_

ol' i gō hī dram' nē os  
scanty amount of  
amniotic fluid in  
the sac

65.

Olig-, oligo- is a prefix meaning little, small, scanty. Olig/uria means  
scanty urination. What does oligo/hydr/amnios mean? \_\_\_\_\_

excessive amount of  
amniotic fluid in the  
sac

66.

What do you think polyhydramnios means?  
\_\_\_\_\_

amniotic sac or amnion

67.

What structure envelops the fetus and contains the fluid protecting  
the fetus? \_\_\_\_\_

68.

The *placenta* is a structure made up of a network of blood vessels  
(arteries and veins). The placenta makes an intimate bond with the  
inside lining of the uterus (endometrium), and attaches to the fetus  
by the umbilical cord. The fetus absorbs oxygen and nutrients from  
its mother through the placenta. The placenta and the uterus do not  
exchange blood, but transport oxygen and nutrients across a thin  
membrane. The fetus excretes carbon dioxide and other wastes  
through this same vascular structure. The placenta begins to form  
about the eighth day of gestation, and by the end of the pregnancy  
weighs about one-sixth the weight of the infant. After the birth of  
the child, the uterus expels the placenta and is sometimes called the  
*afterbirth*.

placenta

The fetus in utero absorbs oxygen and nutrients and excretes car-  
bon dioxide and wastes through a vascular structure called the  
\_\_\_\_\_.

1 pound  
1 ounce

69.

The placenta weighs one-sixth of the weight of the infant. If the  
baby's birth weight is 6 pounds, 6 ounces, what would you expect  
the placenta to weigh at the end of pregnancy? \_\_\_\_\_ pound  
\_\_\_\_\_ ounce.

- en dō mē' trē um  
the inside lining of the  
uterus
70.  
The placenta forms and grows on the endometrium and makes an intimate bond with it. What is the endometrium? \_\_\_\_\_
- placenta  
umbilical cord
71.  
While in utero the fetus grows by getting its nourishment through the \_\_\_\_\_. The fetus is attached to the placenta by the \_\_\_\_\_.
- afterbirth
72.  
The placenta is expelled after the baby is born. The placenta is also called \_\_\_\_\_.
- pregnant (a current  
condition)
73.  
*Gravida, gravid* refers to a pregnant woman; being heavy with child. Gravidism is the condition of being \_\_\_\_\_.
- pri' ma grav' i da  
a woman who is  
pregnant with her  
first child
74.  
*Primi-* means first; *secundi-* means second. Primigravida refers to \_\_\_\_\_.
- a woman in her second  
pregnancy
- What do you think gravida II means?  
\_\_\_\_\_
- secundigravida  
sē kun' da grav' i da
- Build a compound medical term meaning a woman in her second pregnancy: \_\_\_\_\_.
75.  
Here's a quick review. From the suggested answers, select a term to go with each definition. Write your selection in the space provided.
- SUGGESTED ANSWERS:
- |                 |                |
|-----------------|----------------|
| oligohydramnios | primigravida   |
| amniocentesis   | secundigravida |
| amniotic fluid  | placenta       |
- secundigravida
- a woman in her second pregnancy \_\_\_\_\_
- primigravida
- a pregnant woman, first time \_\_\_\_\_
- oligohydramnios
- scanty fluid in the amnion \_\_\_\_\_

placenta	fetus in utero absorbs nutrients and excretes waste through it _____
amniotic fluid	<i>liquor amnii</i> _____
amniocentesis	puncture of the amnion and removal of fluid _____

## Labor and Delivery

*Parturition* is more commonly known as *labor*. Parturition is the process by which a baby is born and the placenta expelled from the uterus. This labor, or parturition, has three stages. The first stage is the stage of *dilation*. It is characterized by contractions of the uterine muscle and dilation of the birth canal and cervix—to let the baby out. The second stage is *expulsion*. The baby is born! In the third stage the placenta is expelled. This is the *placental* stage. The average duration of labor is about 13 hours in primagravida women (12 hours in dilation stage, 1 hour in expulsion stage, and a few minutes for the afterbirth). Labor is about 8 hours long in subsequent pregnancies.

76.  
At term, when gestation is completed, a spontaneous physiological process begins. It has three stages: dilation, expulsion, and placental. This process is called \_\_\_\_\_ or \_\_\_\_\_.

parturition	
labor	

77.  
In the first stage of labor, the uterus contracts rhythmically for 8 to 12 hours. The cervix thins and opens until it is fully dilated so the baby may pass through the birth canal. This first stage is called the \_\_\_\_\_ stage.

dilation	
dī lā' shun	

78.  
The second stage of labor involves expulsion. The infant passes through the birth canal and is \_\_\_\_\_.

expelled, born	
----------------	--

79.  
Expulsion of the placenta follows the birth of the child. This stage of labor is known as the \_\_\_\_\_ stage.

placental	
-----------	--

80.  
What happens during the expulsion stage, or the second stage of labor? \_\_\_\_\_

a child is born (expelled)	
-------------------------------	--

- a few minutes  
the placenta is expelled
81.  
How long is the third stage of labor? \_\_\_\_\_  
What happens in the placental stage of labor? \_\_\_\_\_
- the cervix (neck of the uterus) completely dilates (opens)
82.  
After 8 to 12 hours of uterine contractions during the first stage of labor, what has happened? \_\_\_\_\_
- par tyer ish' un labor
83.  
*Parturition* is another word for childbirth. What other term you just learned also means the process of being born? \_\_\_\_\_
- after labor is completed
84.  
*Antepartum* refers to the entire gestational period before labor begins.  
What does postpartum mean? \_\_\_\_\_
- the recent period around childbirth
85.  
*Neo* means new or recent. *Natus* is a Latin term for birth. What does neonatal mean? \_\_\_\_\_
- medical care and supervision of a pregnant woman before childbirth
86.  
What do you think prenatal care means? \_\_\_\_\_
87.  
Review the terms you just learned before moving on. Select the term that best fits each brief definition. Use the suggestions if you need help.
- |               |             |
|---------------|-------------|
| labor         | parturition |
| prenatal care | afterbirth  |
| dilation      | expulsion   |
- prenatal care  
prē nā' tal kair
- labor or parturition
- medical supervision of a pregnant woman \_\_\_\_\_  
the process of giving birth \_\_\_\_\_

parturition or labor	the act of childbirth _____
dilation	first stage of labor _____
expulsion	second stage of labor _____
placental	third stage of labor _____

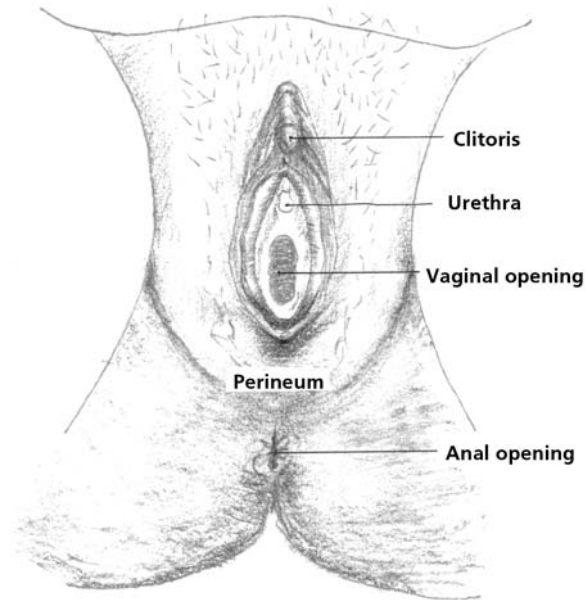


Figure 9.5. Female Pudenda

urethra (urethr/o)	perineum
vagina (vagin/o)	anus (an/o)

88.

*Pudendum, pudenda* (plural) means the external genitals (sex organs) of a female. These parts are easily observed without manual examination.

Take a look at Figure 9.5 above.

pudendal  
pyōō den' dl

Build a term meaning pertaining to the female's external genitals:

\_\_\_\_\_.

89.

*Perineum* refers to the structures that make up the pelvic outlet and comprise the pelvic floor. It is the region between the lip at the vaginal opening and anus in a female or between the scrotum and \_\_\_\_\_ in a male.

anus  
ā' nus

- perineum  
per i nē' um
90.  
A baby coming through the birth canal during parturition can overstretch the vagina and the pelvic outlet. A tear (laceration) may occur in the tissues around the pelvic outlet. This pelvic floor structure is called the \_\_\_\_\_.
- perineum
91.  
*Episiotomy* is an incision of the perineum. During the second stage of labor, just before the baby is born, the obstetrician may incise the perineum to avoid fetal distress and subsequent hypoxia.  
Episiotomy allows faster delivery of a distressed fetus and is an incision into the \_\_\_\_\_.
- suturing repair,  
reconstruction of  
the tissues after an  
episiotomy
92.  
What does episiorrhaphy mean? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- peritoneum  
per i tō nē' um  
per i tō nī' tis  
inflammation of the  
peritoneum
93.  
Here's a term often confused with perineum. *Peritoneum* is a tough membrane covering the viscera (organs in the belly) and lining the abdominal cavity. It clings to the viscera as plastic wrap clings to whatever it covers.  
The membrane that coats the viscera and lines the abdominal cavity is the \_\_\_\_\_.  
perineum/peritoneum  
What is peritonitis? \_\_\_\_\_  
\_\_\_\_\_
- peridenda
94.  
Select the term that best fits the brief definition. Write it in the space provided.
- peritoneum            episiotomy  
pudenda              perineum
- external female genitals \_\_\_\_\_
- perineum
- the region of the external female genitals between the vaginal lip and anus \_\_\_\_\_
- peritoneum
- a membrane coating the viscera and lining the abdominal cavity \_\_\_\_\_

episiotomy \_\_\_\_\_  
 incision of the perineum to more quickly deliver a baby in distress

95.

*Involution* is a *process* the body goes through that reduces the uterus to its normal nonpregnant size and condition following childbirth.

involution

The process that returns an enlarged uterus to its normal size after the baby is born is called \_\_\_\_\_.

96.

*Puerperium* is a *period of time* following the third stage of labor when involution takes place. Involution lasts approximately six weeks.

pōō er pēr' ē um  
 expelled

Puerperium begins after the fetus and the placenta have been \_\_\_\_\_.

97.

Puerperium lasts until the uterus returns to its size and condition before pregnancy began. This period of time is approximately \_\_\_\_\_ weeks.

six

98.

After fulfilling its function, the uterus goes through a process of returning to its earlier nonpregnant condition. This process is called \_\_\_\_\_.

involution

99.

Involution takes place during a six-week period after childbirth. This time period is called the \_\_\_\_\_.

puerperium  
 pōō er pēr' ē um

of or pertaining to the  
 period after  
 childbirth when  
 involution takes place

100.

Explain the meaning of the term puerperal. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

101.

*Sepsis* means the presence of pathogenic organisms or bacteria that have entered the bloodstream and cause serious infections. Years ago, prior to effective antibiotic therapy, the greatest single cause of death following childbirth was called *childbed fever*.

puerperal (sepsis)

Another description of this condition is \_\_\_\_\_  
 sepsis. (pertaining to the time when involution takes place)



inflammation of the peritoneum during puerperium 102.  
What is puerperal peritonitis? \_\_\_\_\_

the process by which the uterus returns to its earlier nonpregnant state after childbirth 103.  
Involution takes place during puerperium. What does involution mean? \_\_\_\_\_

nulli/para nullipara nu lip' ə ra 104.  
*Nulli-* is a prefix meaning none. *Para* means to bear a child. Build a term that refers to a woman who has never borne a child: \_\_\_\_\_ / \_\_\_\_\_.

prīm ip' ə ra a woman who has given birth to one viable child (an event in the past) 105.  
A woman who has delivered more than one living child is described as *multipara*. What does *primipara* mean? \_\_\_\_\_

she has given birth to two viable children 106.  
What does an obstetrician mean when he writes in the patient's chart that she is para-2? \_\_\_\_\_

107.  
Using the word root *para* and *nulli-*, *multi-*, or *primi-*, build a word for each of the following abbreviations.

primipara para-1 \_\_\_\_\_  
nullipara para-0 \_\_\_\_\_  
multipara para-4 \_\_\_\_\_  
mul tip' ə ra

108.  
It's a good time to review what you just covered. Select a term from the suggestions and complete each brief definition.

nullipara                      parturition  
primigravida                antepartum  
involution                    puerperium

involution the process taking place after childbirth that reduces the uterus to normal size and condition \_\_\_\_\_

puerperium	the six-week period after childbirth when involution takes place _____
ante partum	the period in a pregnancy occurring before labor _____
nullipara	a woman who has never given birth to a viable child _____
primigravida	a woman who is pregnant for the first time ever _____
parturition	another term for labor _____

109.

Here are some terms you may find very interesting. Look them up. You'll be surprised at how much you have learned.

acquired	congenital
anomaly	eclampsia
placenta abruptio	placenta previa

110.

Here are 50 new words you worked with in this unit. When you pronounce each term be sure to think about what it means. Then take the Chapter 9 Self-Test.

amenorrhea (ä men ò rē' a)	hysterorrhexis
amniocentesis (am' nē ò sen tē' sis)	(his' ter ò rek' sis)
amnion (am' nē on)	involution (in vō lōō' shun)
amniotic fluid (am nē ô t ik flōō' id)	labor
climacteric (klī mak' ter ik)	mammalgia (ma mal' jē ə)
conception (kon sep' shun)	mammary (mam' ə rē)
dysmenorrhea (dis men ò r ē' ə)	mammopexy (mam' ò pek sē)
embryo	mastodynia (mas tō din' ē ə)
endometrium	mastoncus (mas tong' kus)
(en' dō mē' trē um)	mastopathy (mas top' ə thē)
episiotomy (e pēz ē ot' ò mē)	mastoptosis (mas top tō' sis)
fetus	menometrorrhagia
gestation (jes tā' shun)	(men' ò mētrō rā' jē ə)
gynecomastia (gī' ne kō mas' tē ə)	menopause (men' ò pawz)
gynoplasty (jīn' ò plas tē)	menorrhagia (men ò ral' jē ə)
hysterocele (his' ter ò sēl)	menses (men' sēz)
hysteromyoma	menstruation
(his' ter ò mī ò' mä)	(men strū ā' shun)

metratrophy (mē tra' trō fē)	polyhydramnios
metrorrhagia (mē trō ra' jē ə)	(pä lē hī dram' nē ōs)
multipara (mul tip' ə ra)	postpartum
myometritis (mī' ō mē trī' tis)	primigravida
neonatal (nē ō nā' tal)	(prī' ma grav' i da)
nullipara (nu lip' ə ra)	pudenda (pyōō den' də)
oligohydramnios	puerperal sepsis
(ol' ē gō hī dram' nē ōs)	(pōō er' per al sep sis)
ovum (ō' vum)	puerperium
parturition (pär tyōōr ish' un)	(pōō er pēr' ē um)
perineum (per i nē' um)	spermatozoon
peritoneum (per i tō nē' um)	(sper' ma tō zō' on)
placenta	

## Chapter 9 Self-Test

### Part 1

From the right, select the correct meaning for each of the following medical terms.

- |                          |   |
|--------------------------|---|
| _____ 1. Primigravida    | a. X ray study of the breast                            |
| _____ 2. Pudenda         | b. Temporary lack of menstruation                       |
| _____ 3. Hysteropathy    | c. Pelvic floor, region from vaginal lip to anus        |
| _____ 4. Mammary         | d. Process of returning uterus to nonpregnant state     |
| _____ 5. Mastrodynia     | e. Incision of vagina and pelvic outlet                 |
| _____ 6. Amniotic        | f. Female external genitals                             |
| _____ 7. Episiotomy      | g. Pregnant woman, first time                           |
| _____ 8. Endometritis    | h. Period after childbirth, when involution takes place |
| _____ 9. Involution      | i. Pertaining to sac holding the fetus and fluid        |
| _____ 10. Metratrophy    | j. Rupture of uterus (during labor)                     |
| _____ 11. Perineum       | k. Pertaining to the breast                             |
| _____ 12. Amenorrhea     | l. Uterine atrophy (wasting)                            |
| _____ 13. Puerperium     | m. Inflammation of uterine inside lining                |
| _____ 14. Hysterorrhexis | n. Painful breasts                                      |
| _____ 15. Mammography    | o. Uterine disease                                      |

**Part 2**

Write the medical term for each of the following brief definitions.

1. Surgical fixation of pendulous breasts \_\_\_\_\_
2. Membrane covering abdominal viscera (organs) \_\_\_\_\_
3. Painful breasts \_\_\_\_\_
4. Change-of-life period Female \_\_\_\_\_
5. Organism in utero resembling a human \_\_\_\_\_
6. Organ that nourishes fetus in utero \_\_\_\_\_
7. Surgical removal of the breast \_\_\_\_\_
8. Another term for pregnancy \_\_\_\_\_
9. Pertaining to a recently born child \_\_\_\_\_
10. Woman pregnant with her first child \_\_\_\_\_
11. Pendulous breast \_\_\_\_\_
12. Fertilization of an ovum \_\_\_\_\_
13. Labor and delivery of term pregnancy \_\_\_\_\_
14. Pertaining to before the onset of labor \_\_\_\_\_
15. After childbirth when involution takes place P \_\_\_\_\_

**ANSWERS****Part 1**

1. g
2. f
3. o
4. k
5. n
6. i
7. e
8. m
9. d

**Part 2**

1. Mammopexy
2. Peritoneum
3. Mastodynia, mammalgia
4. Female climacteric
5. Fetus
6. Placenta
7. Mastectomy
8. Gestation
9. Neonatal

- |       |                 |
|-------|-----------------|
| 10. l | 10. Primipara   |
| 11. c | 11. Mastoptosis |
| 12. b | 12. Conception  |
| 13. h | 13. Parturition |
| 14. j | 14. Antepartum  |
| 15. a | 15. Puerperium  |

# 10 The Eye

*In this chapter you'll work with new terms relating to the eye along with other areas in close proximity, including the nose and throat. You will use some new word roots and combining forms and put them together with many suffixes you are already familiar with.*

*This section of the head to toe assessment is known as HEENT, which stands for head, eyes, ears, nose, and throat. As you learn new medical terms, note the words that might fall into HEENT and remember back to Chapters 2 and 3 when you learned the basic medical terms including many involving this section of the assessment. These data will provide information on the patient's neurological status (how well the nerves are working), sensory status (whether those nerves are transmitting good signals to the brain about touch and temperature), and any malformations or indications of congenital anomalies (conditions a person is born with). Remember also that the sensory assessment includes a visual exam (to determine how well the eyes see, move, and respond to certain stimuli), a hearing test (to determine how well the ear transmits sounds), a smell assessment (to determine how well the nose transmits smells), and a taste evaluation (to determine how well the tongue transmits taste). The last part of this section is for assessing the throat, including all the lymph nodes, the parts of the respiratory tract contained in the throat, the blood vessels inside the throat, and the thyroid. To get started, review the mini-glossary below.*

## **Mini-Glossary**

### **Root Words**

blephar/o (eyelid)

core, core/o (pupil)

corne/o, kerat/o (cornea)

cycl/o (ciliary body)

dipl/o (paired, double)

ir, irid/o (iris)

lacrim/o (tear)

ophthalm/o (eye)

retin/o (retina)

scler/o (sclera)

Don't forget to complete the Review Sheet for Chapter 9 before beginning Chapter 10. Keep up the good work!

1.

Let's refresh your memory. You'll find it helpful to review suffixes you already studied and will use again in the first section. Write the meaning of each of the following. Do your best without looking at the answers.

twitching	-spasm _____
suturing, repair	-orrhaphy _____
inflammation of	-itis _____
a diseased condition	-pathy _____
instrument that cuts	-tome _____
dilation, stretching	-ectasia _____
resembling, like	-oid _____
to fix, fixation (into normal place)	-pexy _____
pertaining to out of normal place	-ectopic _____
hernia, herniation	-cele _____
drooping, prolapse	-ptosis _____
measuring, measuring instrument	metr-, -meter _____
instrument for examin- ing, looking inside of	-scope, -scopy _____
treatment, treating a condition	-therapy _____
surgery to restore or make new	-plasty _____



2.

Now, let's try it the other way. Write the suffix that satisfies the definition given in the table below. Then check your answers. You may want to use this table to help you complete the next few frames.

- metr, -meter
- therapy
- itis
- ectasia
- ptosis
- scope, -scopy
- plasty
- oid
- spasm
- pathy
- pexy
- orrhaphy
- tome
- ectopic
- cele

Definition	Suffix
to measure, instrument for measuring _____	_____
treatment for a condition _____	_____
inflammation of _____	_____
dilation, stretch _____	_____
drooping, prolapse _____	_____
examine, instrument to look inside _____	_____
surgery to restore, make new _____	_____
resembling, like _____	_____
twitching _____	_____
a diseased condition _____	_____
surgically fix into normal place _____	_____
suture, repair after trauma _____	_____
instrument for cutting _____	_____
pertaining to out of normal place _____	_____
hernia, rupture _____	_____

## The Eye

of, pertaining to, or  
relating to the eye

ophthalm-  
ophthalm/o

3.

Here are some new terms. Ophthalmology is the medical specialty concerned with the eye and its diseases. Ophthalm/o/malacia means an abnormal softening of the eyeball.

What is the word root? \_\_\_\_\_

Write the combining form: \_\_\_\_\_.

4.

*Ophthalm*, *ophthalm/o* are the word root and combining form for terms difficult to spell and pronounce. But if you pronounce the words correctly, the spelling will be easier. For example, oph/thal/mo is pronounced of thal' mō. The oph is pronounced as \_\_\_\_\_. In the word root ophthalm-, ph comes before th, as in the alphabet (p before t). Oph thal mō is pronounced \_\_\_\_\_.

Pronounce it.

of

of thal' mō

5.

Here's a chance to practice your spelling and pronunciation. Use the combining form *ophthalm/o* and add each of these suffixes to build new words.

-cele            hernia, herniation  
-meter         instrument for measuring  
-plegia         paralysis

Build a term and then pronounce it carefully:

ophthalmocele  
of thal' mō sēl

herniation of the eye (abnormal protrusion) \_\_\_\_\_

ophthalmometer  
of' thal mom' e ter

instrument for measuring the eye \_\_\_\_\_

ophthalmoplegia  
of thal' mo plē' gē a

paralysis of the eye (eye muscle) \_\_\_\_\_

ophthalmologist  
of thal mol' ō jist

6.

The physician who practices the medical specialty concerned with diseases of the eye is an \_\_\_\_\_.

ophthalmoscope  
of thal' mō skōp

7.

The instrument used for examining the interior of the eyeball through the pupil is an \_\_\_\_\_.

double vision

8.

*Dipl/o* means double or paired. *-Opia* is a suffix meaning vision. What does *dipl/opia* mean? \_\_\_\_\_

diplopia  
di plō' pē a

9.

Whenever a pair of eyes fail to record a singular image in the brain, a double image occurs. The medical term for double vision is \_\_\_\_\_.

double (or paired)  
bacteria

10.

Write a brief meaning for each of the following.

*dipl/o/bacteria* \_\_\_\_\_  
\_\_\_\_\_

bluish vision

*cyan/opia* \_\_\_\_\_

- blef a rop' tō sis  
blephar-  
blephar/o
11.  
Blephar/optosis means prolapse (drooping) of an eyelid. The word root for eyelid is \_\_\_\_\_. The combining form is \_\_\_\_\_.
- blef ar e dē' ma  
blepharedema
12.  
Blephar/edema means excess fluid in the tissues of the eyelid. Underline the part of the term meaning swelling due to fluid in the tissues: blepharedema.
- blepharedema
13.  
The condition of swollen eyelids due to excess fluid in the eyelids is \_\_\_\_\_.
- blef' ar ō spazm  
twitching of the eyelid
14.  
Define each of the following terms:  
Blepharospasm means \_\_\_\_\_.
- blef ar ōr' a fē  
suturing of the eyelid
- Blepharorrhaphy means \_\_\_\_\_.
- blef ar ī' tis  
blepharitis
15.  
Build a word that means inflammation of the eyelid:  
\_\_\_\_\_.

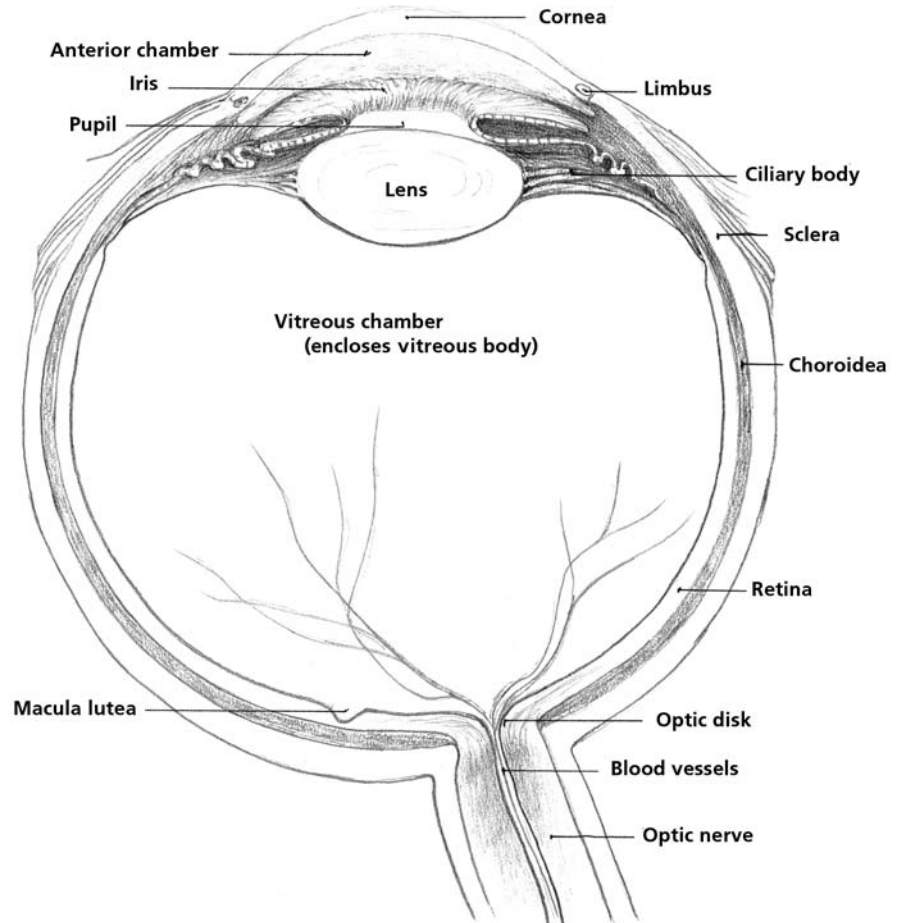


Figure 10.1 The Eye

Sight is the most dominant of the human senses. Over 70% of the body's receptors are the specialized photosensitive cells of the eyes. It has been estimated that a third of all the fibers bringing impulses to the central nervous system come from the eye. The eye is also a window into brain function and can be an important indicator of disturbances in the brain.

The human eye is somewhat like a camera that captures light and focuses it on a light-sensitive area. The wall of the eyeball consists of three coats or layers of tissue. The first layer is the fibrous, rubberlike protective coat called the *sclera*, known as the white of the eye. The sclera gives the eyeball its shape, and can be seen around most of the eyeball's surface. A continuation of the sclera

and the most anterior segment of this fibrous coat is the cornea. The *cornea* is a transparent structure that bulges and has no blood vessels. It plays a big role in focusing light rays on the retina of the eye. The area called the *limbus* is where the cornea meets the sclera.

The middle layer of the eyeball is the vascular layer called the *choroidea*. It lies between the retinal and the scleral layers. The choroidea contains many blood vessels and includes the iris and the ciliary body. The iris, or the colored part of the eye seen through the cornea, is a fibromuscular body that circumscribes the hole (pupil) in front of the lens. Action of the iris increases and decreases the size of the pupil. Another portion of the choroidea is the ciliary body. This structure is continuous with the iris and contains the ciliary muscle, which controls eye movement. The lens is a tightly packed and encapsulated bunch of special fibers. Along with the cornea, it shares responsibility for bringing images into focus on the retina.

The fluid-filled space between the iris and the cornea is the *anterior chamber*. It contains a fluid material called aqueous humor that services the cells within its environment. A large cavity posterior to the lens is known as the *vitreous chamber*. This cavity contains a clear, gelatinous mass known as the vitreous body. The vitreous body maintains the shape of the eye and gives support to the retina.

The *retina* is the innermost coat of the eye, the neural layer. It lines a bit more than the posterior half of the globe. The retina is a complexly composed network of interlacing layers of blood vessels and photoreceptor cells that come together at the *optic disk*. This is actually a blind spot since there are no photoreceptors here. The optic disk penetrates the wall of the eye and forms the optic nerve, which carries impulses to the brain.

When light enters the eye, it passes through the cornea, pupil, and lens, and focuses an image on the retina. At about the center of the retina there is a clearly depressed region with a dense accumulation of photoreceptor cells. This area of the retina providing the sharpest vision is called the *macula lutea*. At the center of macula is the *fovea centralis*. This site represents the center of the greatest visual acuity (clarity of form and color) under lighted conditions.

I hope you enjoyed your tour of the anatomy of the eye.

cornea (kerat/o)

iris (ir, irid, irid/o)

retina (retin/o)

sclera (skler/o)

pupil (cor, core/o)

ciliary body (cycl/o)

kor nē a  
the transparent tissue  
covering the anterior  
sixth of the eye  
ker a top' a thē  
disease of the cornea

16.  
Use Figure 10.1, The Eye, and the accompanying description. The cornea is the transparent tissue covering the anterior sixth of the eye. *Kerat*, *kerat/o* form words referring to the cornea. Write the meaning of each of the following:

cornea \_\_\_\_\_

kerat/o/pathy \_\_\_\_\_

keratoplasty  
ker' a tō plas tē

17.  
Using the combining form *kerat/o*, build a term meaning plastic repair of the cornea: \_\_\_\_\_.

kerat, kerat/o

18.  
The cornea is one-sixth of the outer coat of the eyeball. It is the transparent tissue covering the front of the eyeball. The word root and combining form meaning cornea are \_\_\_\_\_.

cornea

19.  
*Scler/o* refers to the white of the eye. The sclera is the hard fibrous coat forming the outer envelope of the eye. It covers five-sixths of the eyeball. The other anterior sixth is occupied by the \_\_\_\_\_.

skler' al  
pertaining to the sclera

20.  
Corneoscleral means pertaining to an area where the cornea meets the sclera. Write the meaning for each of the following:

skler' ō tōm  
instrument for cutting  
the sclera

scleral \_\_\_\_\_

skler' ō tōm  
instrument for cutting  
the sclera

sclerotome \_\_\_\_\_

sclerectomy  
skle rek' tō mē

21.  
Sclerectasia means bulging (stretching) of the white of the eye. Build a term meaning excision of a portion of the sclera: \_\_\_\_\_.

ī' ris  
ir' i dō kor' nē al  
pertaining to the area  
where the iris and  
cornea meet

ir' id ō sēl  
hernia of the iris

ir/itus  
iritis  
ī rī' tis

i ri dal' jē ə  
pain in the iris

iridectomy  
i ri dek' tō mē

cornea  
vision, sight  
iris  
sclera  
eye  
eyelid  
iris

retinal  
ret' i n'l  
retinitis  
ret i nī' tis  
retinoid  
ret' i noyd

22.

*Iris* means rainbow. The iris is a diaphragm perforated in the center (the pupil). The word roots referring to the donut-shaped color in the eye are *ir*, *irid*, and *irid/o*. What do you think iridocorneal means? \_\_\_\_\_

Iridocele means \_\_\_\_\_.

23.

One of the word roots for the iris is *ir*. It has very limited use, but it's always used to express inflammation.

Using the word root *ir* build a word meaning inflammation of the iris: \_\_\_\_\_ / \_\_\_\_\_.

24.

*Irid/o* is the combining form used to refer to the iris in almost all other words. *Iridalgia* means \_\_\_\_\_.

25.

Build a term meaning excision of part of the iris:  
\_\_\_\_\_.

26.

Write what each of the following word roots or combining forms means.

kerat/o \_\_\_\_\_

opia \_\_\_\_\_

irid/o \_\_\_\_\_

scler/o \_\_\_\_\_

ophthalm/o \_\_\_\_\_

blephar/o \_\_\_\_\_

ir \_\_\_\_\_

27.

*Retin/o* refers to the complex membrane lining the inside back surface of the eye. It receives the visual light rays, which the brain interprets and gives meaning. Build a word meaning

pertaining to the retina \_\_\_\_\_

inflammation of the retina \_\_\_\_\_

resembling the retina \_\_\_\_\_

- retinoscope or  
ophthalmoscope  
ret' i nō skōp
28.  
Retinopexy means affixing (or adhering) the retina to the wall of the eyeball for correcting retinal detachment. What would you call an instrument for examining the retina to look for retinopathy?  
\_\_\_\_\_
- ret i nop' a thē  
disease of the retina
29.  
What does retinopathy mean? \_\_\_\_\_  
\_\_\_\_\_
- (eye), iris
30.  
The pupil is the circular opening in the center of the iris through which the light rays enter the eye. It is the core or center of the eye. *Cor, core/o* refer to the pupil in the center of the \_\_\_\_\_.
31.  
An ophthalmologist may use drops in the eye to dilate the pupil before an examination.  
Analyze the term *cor/ectasia*.  
*Cor-* is the root meaning \_\_\_\_\_;  
*ectasia* means \_\_\_\_\_.
- pupil  
dilation  
kōr ek tō' pē a  
a misplaced pupil
- What does *cor/ectopia* mean? \_\_\_\_\_  
\_\_\_\_\_
32.  
Coreoplasty is a surgical procedure for correcting a deformed pupil.  
Write a term meaning to measure the size of a pupil. \_\_\_\_\_  
\_\_\_\_\_
- kōr ē om' e trē  
coreometry
33.  
Take another look at Figure 10.1, The Eye. The ciliary body controls movement of the eye. The word root for ciliary body is *cycl/o*. It means circle or surrounding.  
What does *cyclo/paralysis* mean? \_\_\_\_\_  
\_\_\_\_\_
- sī klō pa ral' i sis  
paralysis of the ciliary  
body
34.  
Cyclocryotherapy means freezing of the ciliary body in the treatment of glaucoma. Underline the part of the term referring to freezing: cyclocryotherapy.
- sī klō krī' ō ther' a pē  
cyclocryotherapy



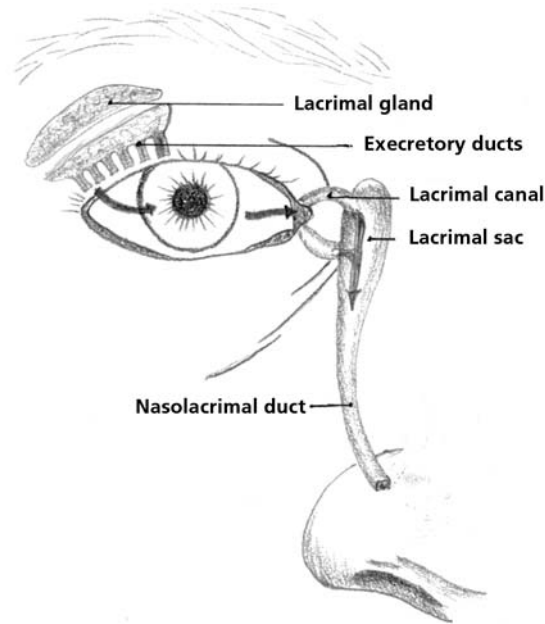
sī klō ker a tī' tis  
inflammation of the  
cornea and the  
ciliary body

35.

Use Figure 10.1 for help. Cyclitis means inflammation of the ciliary body. What is the meaning of cyclokeratitis? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



**Figure 10.2** The Lacrimal Apparatus

The human lacrimal apparatus is responsible for producing tears and delivering them to the eye. When an excess is produced, the tears flow into the nasal cavities.

The lacrimal apparatus begins with the *lacrimal gland* seen under the upper lateral eyebrow and extending inward toward the midline. Blinking stimulates the lacrimal gland to secrete lacrimal fluid (tears), which wash the eye. It also contains substances that destroy the cell walls of bacteria, and it moistens the surface of the eye. The fluid passes through a series of excretory ducts and enters a fold of tissue under the upper eyelid. The eyelid then distributes the tears across the eyeball. Excess fluid flows to the medial corner of the eye passing through a tiny opening and entering the *lacrimal canal*. The upper and lower lacrimal canals drain into the *lacrimal sac*. Excess tears move from the lacrimal sac into the *nasolacrimal duct* and pass through an opening into the nose. This is the reason one snuffles when crying.

lak' ri mal  
relating to tears

36.  
Look again at Figure 10.2. The lacrimal apparatus consists of the gland, the sac, and the duct. The purpose of the lacrimal apparatus is to keep the surface of the eye moist and protected. What do you think lacrimal means? \_\_\_\_\_

lacrimal

37.  
The gland that secretes tears is the \_\_\_\_\_ gland.

lacrimal

The sac that collects the tears is the \_\_\_\_\_ sac.

nasolacrimal duct

What is the structure that empties the tears into the nasal cavity?  
\_\_\_\_\_

38.  
Tears keep the surface of the eye moistened. Tears are continually being formed and removed. When tears form more quickly than they can be removed by the lacrimal apparatus, we say the person is \_\_\_\_\_.

crying

39.  
How about a review? Complete each of the following brief definitions. Use the suggested answers to help you.

SUGGESTED ANSWERS:

iritis	cycloplegia
lacrimal	diplopia
cyclocryotherapy	sclerotome
retinoscopy	ophthalmic
coreometry	keratitis
iridocele	keratoplasty

coreometry	measurement of pupil size _____
iridocele	herniation of the iris _____
ophthalmic	pertaining to the eye _____
retinoscopy	examination of the retina _____
iritis	inflammation of the iris _____
sclerotome	instrument for cutting the sclera _____
lacrimal	relating to tears _____
keratoplasty	surgical reconstruction of the cornea _____
cycloplegia	paralytic ciliary body _____
keratitis	inflammation of the cornea _____
diplopia	double vision _____
cyclocryotherapy	treatment (of glaucoma) freezing the ciliary body _____

40.

Try these now. Write the meaning of each of the following word roots:

retina  
pupil  
ciliary body  
eyelid  
cornea  
eye  
sight, vision  
iris

retin/o \_\_\_\_\_  
cor/o, core/o \_\_\_\_\_  
cycl/o \_\_\_\_\_  
blephar/o \_\_\_\_\_  
kerat/o (corne/o) \_\_\_\_\_  
ophthalm/o \_\_\_\_\_  
opia \_\_\_\_\_  
irid/o \_\_\_\_\_

41.

Here are 27 more medical terms you have worked with in Chapter 10. Don't forget to pronounce each one carefully before taking the final Chapter 10 Self-Test.

blepharodema (blef' ar ə dē' mā)	iridoplegia (ir id ō plē' jē ə)
blepharorrhaphy (blef ar ōr' ā fē)	iritis (ī rī' tis)
blepharoptosis (blef ar op tō' sis)	keratome (ker' ə tōm)
corectasia (kōr ek tā' zē ə)	keratoplasty (ker' ə tō plas tē)
corectopia (kōr ek tō' pē ə)	keratoscleritis (ker' ə tō skler ī' tis)
coreometer (kōr ē om' e ter)	keratotomy (ker a tōt' ō mē)
coreoplasty (kōr' ē ō plas tē)	nasolacrimal (nā zō lak' ri məl)
corneal (kor' nē al)	ophthalmalgia (of' thal mal' jē ə)
cyclokeratitis (sī' klō ker i tī' tis)	ophthalmoscope (of thal' mō skōp)
cycloplegia (sī klō plē' jē ə)	retinitis (ret i nī' tis)
diplopia (dī plō' pē ə)	retinopathy (ret i nop' ə thē)
iridectomy (ir i dek' tō mē)	retinoscopy (ret i nos' kō pē)
iridocele (ir id ō sēl)	sclerectomy (skler ek' tō mē)
	sclerotome (skler' ə tōm)

## Chapter 10 Self-Test

### Part 1

From the list on the right, select the correct meaning for each of the following often used medical terms.

- |                          |   |
|--------------------------|---|
| _____ 1. Keratoscleritis | a. Stretching (dilation) of the pupil                     |
| _____ 2. Corectasia      | b. Instrument to cut the cornea                           |
| _____ 3. Blepharedema    | c. Paralysis of the iris                                  |
| _____ 4. Ophthalmologist | d. Inflammation of cornea and sclera                      |
| _____ 5. Iridoplegia     | e. Resembling the retina                                  |
| _____ 6. Keratome        | f. Swollen eyelids due to fluid in the tissues            |
| _____ 7. Retinoid        | g. Physician who specializes in the study of eye diseases |

### Part 2

Write the medical term for each of the following brief definitions.

- |                                  |       |
|----------------------------------|-------|
| 1. Pertaining to nose and tears  | _____ |
| 2. Instrument to examine the eye | _____ |
| 3. Plastic surgery of the cornea | _____ |
| 4. Double vision                 | _____ |
| 5. Drooping eyelid               | _____ |
| 6. Inflammation of the iris      | _____ |
| 7. Pertaining to the cornea      | _____ |

## ANSWERS

### Part 1

1. d
2. a
3. f
4. g
5. c
6. b
7. e

### Part 2

1. Nasolacrimal
2. Ophthalmoscope
3. Keratoplasty
4. Diplopia
5. Blepharoptosis
6. Iritis
7. Corneal

# 11 The Respiratory Tract

*In Chapter 11 you'll work on new terms relating to the respiratory tract. Some words will be familiar; others are new. Practice your compound medical terms as you learn new root words throughout this chapter.*

*Chapter 11 rounds out our head-to-toe assessment with the respiratory system. Respiratory provides information about how a patient is breathing and about the effectiveness of oxygen exchange. Assessment includes sounds listened to with a stethoscope over the lungs, an inspection assessment to look for abnormalities, a percussion (tapping) assessment to listen for abnormalities, and a palpation (touching) assessment to feel for abnormalities. This combination of techniques can tell us if the lungs are working effectively, and it provides information for the head-to-toe assessment. Review the mini-glossary below to get started on Chapter 11.*

## **Mini-Glossary**

### **Root Words**

bronch/i (*bronch/o, bronchus*)

laryng/o (*voice box*)

ment/o (*chin*)

nas/o (*nose*)

pharyng/o (*throat*)

pleur/o (*covering of the lung*)

pne/o (*air, breathe*)

pneum/o (*air, breathe*)

pneumon/o (*lung*)

thorac/o (*thorax*)

trache/o (*windpipe*)

Don't forget to complete the Review Sheet for Chapter 10 before beginning Chapter 11. Keep up the good work!

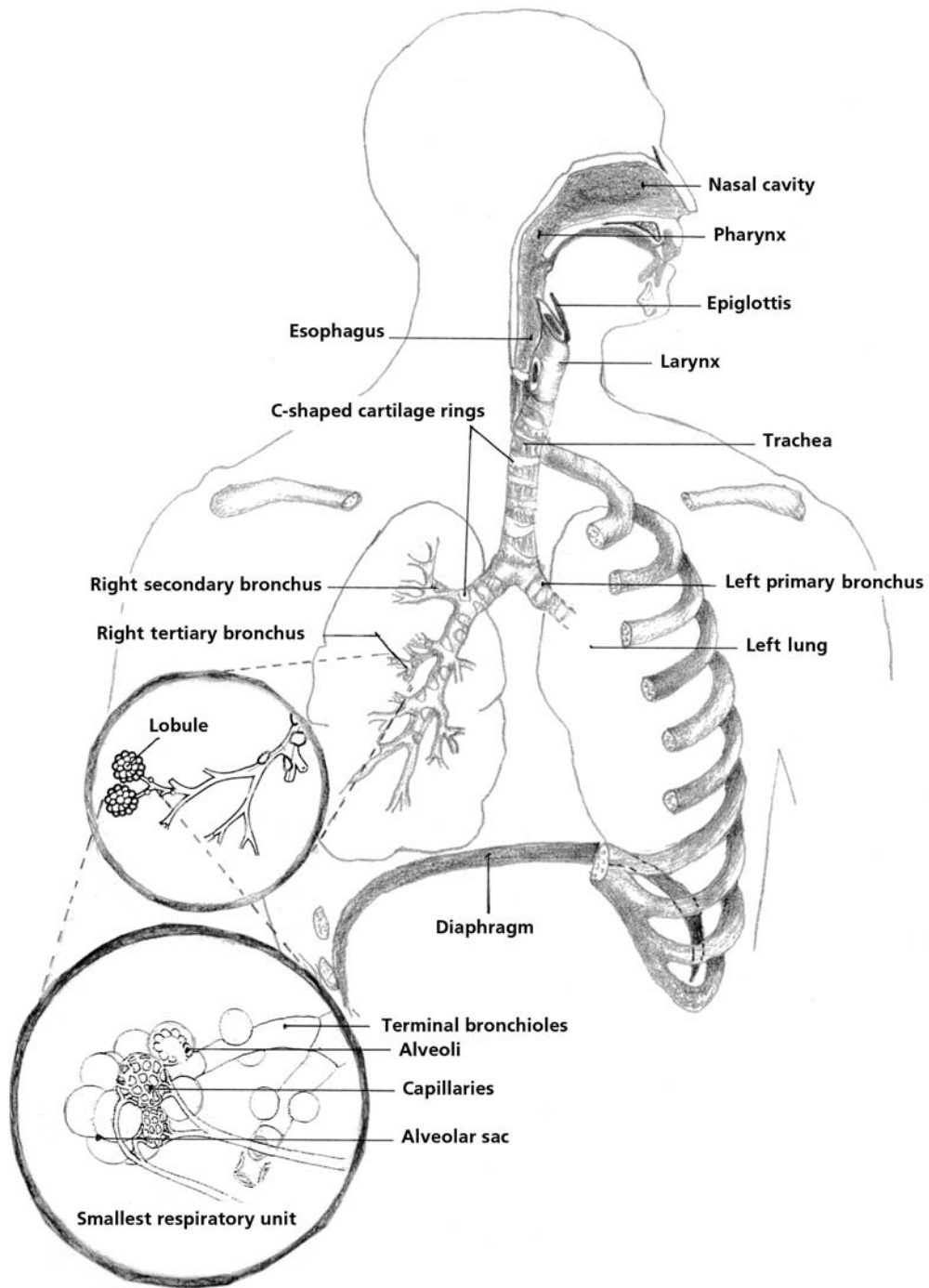


Figure 11.1 The Respiratory Tract (Cutaway Views)

The respiratory system consists of passageways that receive incoming air and carry it to the *lungs* for exchange of oxygen and carbon dioxide gases. The lungs are the main organs of gas exchange in the body. They are soft, spongy organs enveloped in a tough, wet and slippery transparent membrane called the *pleura*. The lungs are protected by the bony cage of the thorax. Most of the rest of the skeleton of the respiratory tract is cartilaginous, right down to the smallest air passageway. The dome-shaped muscular *diaphragm* provides most of the force necessary for inspiration and expiration of air. One quarter of the force is generated by the intercostal muscles moving the ribs. When the diaphragm contracts and flattens in its space, air enters the lungs. When it relaxes, air is expelled from the lungs. The diaphragm is the primary muscle in respiration.

Air enters the respiratory tract through the oral and nasal cavities. The *nasal cavity* houses the olfactory sense organ used in the sense of smell. The *pharynx* is an open area continuous with the nasal cavity, and its lower end opens to the *esophagus* and *larynx*. These upper passageways warm, moisten, and purify the air on its way to the lower respiratory tract.

The *larynx* is an enlarged section of the upper respiratory tract at the top of the trachea. The opening to the larynx is guarded by a leaf-like flap of cartilage called the *epiglottis*. This structure prevents food from entering the respiratory passageway and directs it to the esophagus. Beneath the epiglottis is the opening to the larynx called the *glottis*. The larynx houses the vocal cords, an important component of the larynx used in speaking. For this reason, the larynx is often called the voice box. The vocal cords are composed of elastic fibers that help produce sound when air is forced between them. These sound waves are formed into words by the changing shapes of the pharynx and oral cavity and by using the tongue and lips.

Inferior to the larynx is the *trachea*, the passageway of air to the lungs. The trachea is a flexible cylindrical tube about one inch in diameter and approximately four inches in length. It is composed of 16 to 20 incomplete c-shaped rings of cartilage connected to one another by very elastic ligaments. The cartilage rings provide a semi-rigid support to the wall of the trachea, preventing it from collapsing inward. The trachea extends downward in front of the esophagus and into the thoracic cavity.

The *bronchial tree* consists of the branched airways extending from the trachea to the smallest respiratory unit in the lung. It begins with the left and right *primary bronchi* (pl.). Each primary bronchus enters a lung and then subdivides, forming left and right *secondary bronchi*. We see three secondary bronchi in the

anatomical right lung. The secondary bronchi branch again and the *tertiary bronchi* become *bronchioles*, less than 1 mm in diameter. These bronchioles give off smaller *terminal bronchioles* that represent the end of the air-conducting pathway.

Each *respiratory bronchiole* supplies air to lobules. A lobule is a basic gas exchange complex composed of air cells, called *alveoli*, which are arranged in *alveolar sacs*. The alveoli are arranged in grape-like clusters. The walls of the air cells are surrounded by capillaries. *Capillaries* are networks of pulmonary *arterioles* and pulmonary *venules*. The walls of the capillaries are fused to the structurally similar walls of the alveoli. Oxygen and carbon dioxide rapidly diffuse through the walls of these microscopic cells. The blood readily absorbs the oxygen and gives up the carbon dioxide, which is quickly exhausted to the external atmosphere. These basic units make up most of the lung's volume. The respiratory system is considered relatively sterile and therefore well protected. Nowhere in the body does the outside world, with all its creatures of microscopic dimension, have such an easy access to the protected interior cavities of the body as it does at the air/blood interfaces in the lungs.

lung (pneumon/o)	diaphragm
nasal cavity (nas/o)	pharynx (pharyng/o)
esophagus (esophag/o)	larynx (laryng/o)
breathe, breathing (pne/o)	air, gases (pneum/o)
trachea (trache/o)	pleura (pleur/o)
bronchus, (bronch/o), whether primary, secondary, or tertiary parts of the bronchial tree	

breathe or breathing

1. *Pne/o* comes from the Greek word *pneia* (breathe). *Pne/o* anywhere in a word means \_\_\_\_\_.

will  
brad ip nē' ə  
silent

2. When *pne/o* begins a word, the "p" is silent. When *pne/o* occurs later in a word, the "p" is pronounced; for example, when you pronounce *brady/pnea*, you \_\_\_\_\_ pronounce the letter "p."  
(will/will not)

In the term *pneumonia*, the "p" is \_\_\_\_\_.  
(pronounced/silent)

slow breathing

3. *Brady/pnea* means \_\_\_\_\_.



tachy/pnea tachypnea tak ip nē' ə	A word for rapid breathing is _____ / _____.
tachypnea	4. The rate of respiration (breathing) is controlled by the amount of carbon dioxide in the blood. Increased carbon dioxide speeds up breathing and causes _____.
tachypnea	5. Muscle exercise increases the amount of carbon dioxide in the blood. This speeds respiration and produces _____.
without breathing	6. The prefix <i>a-</i> literally means without. Thus apnea means _____.
apnea ap' nē ə	7. <i>A/pnea</i> really means temporary cessation of breathing. If the failure to breathe were not temporary, death would result. Temporary cessation of breathing is referred to as _____.
apnea a-	8. If the level of carbon dioxide in the blood falls very low, temporary cessation of breathing results. This is called _____. The prefix meaning without is _____.
bradypnea	9. If breathing is merely very slow, it is called _____.
tachypnea	10. When breathing is abnormally fast, it is called _____.
la rin jī' tis inflammation of the voice box	11. See above to help you identify the word root for each anatomical part. Then write a meaning for each of the following terms. laryng/itis _____
plōōr ī' tis inflammation of the pleura	pleuritis _____
fair ing' gō plas tē plastic surgery of the throat	pharyng/o/plasty _____

- la ring' gō sēl  
herniation of the voice  
box
12.  
Look again at Figure 11.1. Seeing the various parts will help you learn. What does laryng/o/cele mean? \_\_\_\_\_  
\_\_\_\_\_
- laryngectomy  
la rin jek' tō mē
13.  
Build a term meaning surgical removal of the voice box:  
\_\_\_\_\_.
- la ring' gō skōp  
instrument for  
examining the  
voice box
14.  
Write a meaning for each of the following:  
laryngoscope \_\_\_\_\_  
\_\_\_\_\_
- la ring' gō spazm  
spasm of the voice box
- laryngospasm \_\_\_\_\_  
\_\_\_\_\_
- trā kē ō rā' jē ə  
hemorrhage from the  
windpipe
15.  
See Figure 11.1 again. *Trachea* means windpipe. Write a brief definition for each of the following new terms:  
tracheorrhagia \_\_\_\_\_  
\_\_\_\_\_
- trā kē al' jē ə  
pain in the windpipe
- trachealgia \_\_\_\_\_  
\_\_\_\_\_
- trā kē os' tō mē  
a permanent opening  
into the windpipe
- tracheostomy \_\_\_\_\_  
\_\_\_\_\_
- trache or trache/o
16.  
Write the word root and combining form for windpipe:  
\_\_\_\_\_.
- brong kos' kō pē  
looking into the  
bronchus
17.  
A *bronchus* is one of the major divisions of the windpipe. The bronchi (plural) direct the air into the lungs. Write a meaning for each of the following:  
bronchoscopy \_\_\_\_\_  
\_\_\_\_\_
- bron' kō spazm  
spasm of the bronchus
- bronchospasm \_\_\_\_\_  
\_\_\_\_\_

brong kī' tis  
inflammation of the  
bronchus or bronchi

bronchitis \_\_\_\_\_  
\_\_\_\_\_

bronch, bronch/o

18.  
The word root and combining form meaning major branches of the windpipe that open into the lungs is \_\_\_\_\_.

plōō rī' tis  
inflammation of the  
pleura

19.  
Pleural means pertaining to the covering on the lungs. The pleural membrane completely covers the lungs and clings to it like plastic wrap. Only a few drops of thick fluid keep the lung and the pleura apart.  
Pleuritis means \_\_\_\_\_  
\_\_\_\_\_.

pleuralgia or  
pleurodynia  
plōō ral' jē ə  
plōō rō din' ē ə

20.  
Pleurisy is another word for inflammation of the covering of the lungs. Build a term that means pain in the pleura:  
\_\_\_\_\_.

plōō rō sen tē' sis  
puncture of the pleural  
space and removing  
the fluid

21.  
Pleurisy may cause excessive fluid to collect within the space between the lung and the pleura. A pleurocentesis can be used to diagnose pleurisy. What do you think pleurocentesis means? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

diaphragm  
dī' a fram

22.  
Refer to Figure 11.1 again. The musculomembranous wall separating the abdomen from the chest cavity is the \_\_\_\_\_.

in

23.  
During inspiration the diaphragm contracts; it flattens out downward, permitting the lungs to move downward, or expand, and fill with air. Inspiration is breathing \_\_\_\_\_.  
(in/out)

out

24.  
During expiration the diaphragm relaxes. It resumes its inverted basin shape, squeezing the lungs and expelling the air out of the lungs. Expiration is breathing \_\_\_\_\_.  
(in/out)

diaphragm 25.  
The organ largely responsible for inspiration and expiration is the \_\_\_\_\_.

hiccough, or hiccup 26.  
hik' kof A sudden spasm of the diaphragm usually produces a giggle all around. It is called singultus. Can you guess what it means?  
\_\_\_\_\_

singultus 27.  
sin gul' tus Another term for hiccough is \_\_\_\_\_.

hē mop' ti sis 28.  
spitting blood *Ptyxis* is a Greek term meaning spitting. What does hem/o/ptysis mean? \_\_\_\_\_

-ptysis (the p is silent) 29.  
hē ma tem' a sis Hemoptysis means spitting blood (arising from hemorrhage of larynx, trachea, bronchi, or lungs). Write the suffix meaning spitting, expelling blood from the stomach (vomiting blood) or spitting up. \_\_\_\_\_

hem/o, hemat/o 30.  
What does hemat/emesis mean? \_\_\_\_\_

31.  
Write the two combining forms for blood you just used in frames above. \_\_\_\_\_ and \_\_\_\_\_

32.  
Using either suffix, -ptysis or -emesis, build a medical term to express the following definitions:

hemoptysis spitting blood from hemorrhage of the lungs \_\_\_\_\_

hematemesis expelling blood from the stomach \_\_\_\_\_

rīn or ra' jē a 32.  
hemorrhage from the nose *Epistaxis* means nosebleed. What does rhinorrhagia mean?  
\_\_\_\_\_

epistaxis 33.  
ep i stak' sis Two terms mean bleeding from the nose. They are  
rhinorrhagia \_\_\_\_\_ and \_\_\_\_\_.

rhinorrhagia Which term means severe bleeding from the nose? \_\_\_\_\_

spitting blood (arising from the larynx, trachea, bronchi, or lungs) 34. What does hemoptysis mean? \_\_\_\_\_  
 \_\_\_\_\_

vomiting blood (from the stomach) 35. What does hematemesis mean? \_\_\_\_\_  
 \_\_\_\_\_

rhinorrhagia 36. Nasal hemorrhage is \_\_\_\_\_ .  
 epistaxis Nosebleed is \_\_\_\_\_ .

nyōō mat' ik 37. *Pneum/o, pneumat/o* mean air, gases, or exchange of gases. What  
 pertaining to air or gases (or exchange of gases) does pneumatic mean? \_\_\_\_\_  
 \_\_\_\_\_

brad ip nē' a 38. Pne/o relates to breathing. Do you remember what bradypnea  
 breathing very slowly means? \_\_\_\_\_

pne/o (nē ō) 39. The combining form referring to inhale and exhale, or in other  
 words to breathe, is \_\_\_\_\_.  
 Pneum/o, pneumat/o are combining forms meaning air, gases, or exchange of gases. Explain what these terms mean:

an abnormal condition of air in a joint pneum/arthr/osis \_\_\_\_\_  
 \_\_\_\_\_

presence of air or gases in the blood of heart pneumato/cardia \_\_\_\_\_  
 \_\_\_\_\_

air in the urine during or after urination pneumat/uria \_\_\_\_\_  
 \_\_\_\_\_

pneum- What is the word root for air or gases? \_\_\_\_\_

nyōō mol' ō jē 40. Pneum/ology refers to the science of how the lungs exchange  
 air or gases \_\_\_\_\_ or \_\_\_\_\_.

not breathing, breathing is absent Apnea means \_\_\_\_\_.

pneumotherapy  
nyōō mō ther' ə pē

41. Hydrotherapy means treatment with water. Build a term meaning treatment with (compressed) air: \_\_\_\_\_.

pneum/o  
pneumon/o

42. *Pneumon, pneumon/o* mean lung. At a quick glance you may confuse it with the root for air or gases. Write the combining forms for both: \_\_\_\_\_; \_\_\_\_\_.  
air or gases lung

pneumonitis  
nyōō mō nī' tis

pneumonectomy  
nyōō mōn ek' tō mē

43. Pneumonia is a serious disease of the lung. Build a term for each of the following:  
inflammation of the lung \_\_\_\_\_  
surgical removal of a lung \_\_\_\_\_

pne/o (nē ō)

44. Drawing air into the lungs and pushing air out of the lungs is called breathing. The combining form referring to breathing is \_\_\_\_\_.

nyōō mon' ō graf

radiographic picture  
of the lungs (chest  
X ray)

45. Pneum/o/encephal/o/graphy means X ray examination of spaces within the brain. These X rays are taken following withdrawal of cerebrospinal fluid (via lumbar puncture) and replacement of it with injected air or gas. What is a pneumon/o/graph? \_\_\_\_\_  
\_\_\_\_\_

breathing, breathe  
air or gas  
lung

46. Write a brief meaning for each of the following:  
pne/o \_\_\_\_\_  
pneum/o or pneumat/o \_\_\_\_\_  
pneumon/o \_\_\_\_\_

thorax  
thor' aks

47. *Thorax* encloses the chest cavity. It refers to the upper part of the trunk between the neck and the abdomen. The diaphragm separates the abdomen from the \_\_\_\_\_.

thoracic cavity or  
thorax

48. The organs of the digestive apparatus are enclosed in the abdomen. The chief organs of the circulatory and respiratory systems are located in the \_\_\_\_\_.

thor a cot' ə mē  
incision into the chest  
cavity

thor a cō sen tē' sis  
puncture of the chest  
cavity to draw off  
fluid

hē mō thor' aks  
blood in the chest  
cavity

49.

*Thorac* and *thorac/o* are the word root and combining form referring to the chest cavity.

Thoracotomy means \_\_\_\_\_  
\_\_\_\_\_.

Explain thoracentesis: \_\_\_\_\_  
\_\_\_\_\_.

50.

Pneumothorax means air in the chest cavity. What does hemothorax mean? \_\_\_\_\_

51.

Let's conclude this unit with a review. Using the suggested answers, complete each of the following brief definitions. Write your answer in the space provided.

SUGGESTED ANSWERS:

bronchus(i)	pleura
diaphragm	trachea
larynx	singultus
pharynx	epistaxis

larynx  
bronchi  
epistaxis  
trachea  
singultus  
pharynx  
pleura  
diaphragm

voice box \_\_\_\_\_  
main branches of the windpipe \_\_\_\_\_  
nosebleed \_\_\_\_\_  
windpipe \_\_\_\_\_  
hiccough \_\_\_\_\_  
throat \_\_\_\_\_  
tough film enveloping the lungs \_\_\_\_\_  
muscle controlling breathing \_\_\_\_\_

52.

Try that again.

SUGGESTED ANSWERS:

apneic	hemoptysis
pneumothorax	rhinoplasty
pneumonogram	pneumonia
nasal	pleurodynia

pneumonia	serious lung condition _____
hemoptysis	spitting blood (arising from trachea) _____
pneumonogram	X ray of the lung(s) _____
pneumothorax	collection of air in the chest cavity _____
nasal	pertaining to the nose _____
rhinoplasty	a “nose job” _____
pleurodynia	pain in the pleura _____
apneic	pertaining to absence of breathing _____

53.

Here’s one last exercise to show how far you have come! For each area of medical concern, write the term describing a practicing specialist

	AREA OF MEDICAL CONCERN	SPECIALIST
Pathologist	Bodily changes in structure and function due to disease	_____
Psychiatrist	Mental illness	_____
Dermatologist	Skin and its diseases	_____
Gynecologist	Diseases of women	_____
Cardiologist	Diseases of the heart	_____
Neurologist	Nervous system diseases	_____
Pediatrician	Childhood illnesses	_____
Obstetrician	Pregnancy and childbirth	_____
Ophthalmologist	Diseases of the eye	_____
Urologist	Conditions of urogenitals	_____

54.

Try it again. Describe the area of medical concern for these specialists.

	SPECIALIST	AREA OF MEDICAL CONCERN
Bones and muscles	Orthopedist	_____
Pregnancy and childbirth	Obstetrician	_____
Old age, aging	Geriatrician	_____
Causes of epidemics	Epidemiologist	_____
Skilled diagnosing	Diagnostician	_____
Anesthesia and pain	Anesthesiologist	_____
Urinary and genitals	Urologist	_____
Tumors and treatment	Oncologist	_____
Ear, nose, throat, and voice box	Otorhinopharyngolaryngologist	_____



55.

Here are 24 more medical terms you have worked with in Chapter 11. Don't forget to pronounce each one carefully before taking the final Chapter 11 Self-Test.

apnea (ap' nē ə)	pleuralgia (plōō ral' jē ə)
bradypnea (brad ip nē' ə)	pleurisy (plōōr' i sē)
bronchitis (brong kī' tis)	pleurocentesis
bronchoscopy	(plōōr' ō sen tē' sis)
(brong kos' kō pē)	pneumothorax
diaphragm (dī' a fram)	(nyōō mō hē mō thōr' aks)
epistaxis (ep i stak' sis)	pneumonia (nyōō mō' nē ə)
hemoptysis (hē mop' ti sis)	rhinoplasty (ri' nō plas tē)
laryngeal (la rin' jē al)	singultus (sing gul' tus)
laryngospasm	tachypnea (tak ip nē' ə)
(la ring' gō spazm)	tracheorrhagia
nasopharyngitis	(trā kē ō rāj' jē ə)
(nā' zō fair in jī' tis)	tracheostomy (trā kē os' tō mē)
pharyngitis (fair in jī' tis)	thorax (thor' aks)
pharyngotomy	thoracocentesis
(fair in got' ō mē)	(thōr' ə kō sen tē' sis)

## Chapter 11 Self-Test

### Part 1

From the list on the right, select the correct meaning for each of the following often used medical terms.

- |                         |  |
|-------------------------|--|
| _____ 1. Pneumonectomy  | a. Nosebleed                                     |
| _____ 2. Pleurocentesis | b. Spitting blood from the lungs                 |
| _____ 3. Pleuralgia     | c. Pertaining to nose and chin                   |
| _____ 4. Hemoptysis     | d. Puncture of the pleural space to remove fluid |
| _____ 5. Nasomental     | e. Pain of the pleura                            |
| _____ 6. Tracheorrhagia | f. Hemorrhage from the trachea                   |
| _____ 7. Epistaxis      | g. Inflammation of the bronchi                   |
| _____ 8. Bronchitis     | h. Surgical removal of a lung                    |
| _____ 9. Bradypnea      | i. Abnormally slow breathing                     |

### Part 2

Write the medical term for each of the following brief definitions.

- |  |       |
|--|-------|
| 1. Air in the chest cavity             | _____ |
| 2. Incision into the throat            | _____ |
| 3. Hiccough                            | _____ |
| 4. Pain in the covering of the lung    | _____ |
| 5. Permanent opening into the windpipe | _____ |
| 6. Spasm of the voice box              | _____ |
| 7. Nosebleed                           | _____ |
| 8. Very fast breathing                 | _____ |

**ANSWERS**

**Part 1**

1. h
2. d
3. e
4. b
5. c
6. f
7. a
8. g
9. i

**Part 2**

1. Pneumothorax
2. Pharyngotomy
3. Singultus
4. Pleurodynia
5. Tracheostomy
6. Laryngospasm
7. Epistaxis
8. Tachypnea

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# Review by Body System Assessment

Medical professionals use a standard assessment order as they describe and check patients, which helps make sense of all the possible problems or normal findings for other practitioners that may follow the assessment. The following list contains the medical terminology you have learned in this book divided by body system. The list is not comprehensive, but it will give you a good idea of some of the most common terminology in each body system. It may help you to remember these groupings as you study. Remember the importance of this order as you review a client's chart or document your own findings. Consistency of terminology among medical professionals helps increase productivity and accuracy, and it is important to be as specific as possible.

## Assessment by Body System

HEENT: head, eyes, ears, nose, and throat

Cardiac: heart, veins and arteries

Respiratory: lungs

Chest: shoulders to diaphragm, excluding heart and lungs

Abdomen: abdominal

GI: Gastrointestinal

GU: Genitourinary

Ext: Extremities

## Medical Terminology by Body System

### HEENT: Head, Eyes, Ears, Nose, and Throat

Adenitis: inflammation of a gland

Adenoma: tumor of a gland

Afebrile: without fever

Alopecia: absence of hair

Andontia: without teeth

Aphasia: speechless

Asymptomatic: without symptoms  
Bradyphasia: abnormally slow speech  
Cephalgia: head pain  
Cephalalgia: headache  
Cheilitis: inflammation of the lips  
Cheilosis: abnormal condition of the lips  
Corectopia: misplaced pupil  
Cranioplasty: surgical repair of the skull  
Craniotomy: incision into the skull  
Cyclitis: inflammation of the ciliary body  
Cyclokeratitis: inflammation of the cornea and the ciliary body  
Dentalgia: tooth pain  
Dysphasia: difficulty speaking  
Encephalitis: inflammation of the brain  
Encephalocele: herniation of the brain  
Encephaloma: brain tumor  
Gingivalgia: painful gums  
Gingivectomy: excision of the gums  
Gingivitis: inflammation of the gums  
Gingivoglossitis: inflammation of the gums and tongue  
Glossalgia: painful tongue  
Glossectomy: excision of the tongue  
Glossitis: inflammation of the tongue  
Glossospasm: tongue spasm  
Hydrocephalus: water on the head  
Hyperpyrexia: fever over 106°F in an adult  
Hyperthermic: body temperature above normal  
Hyperthyroidism: excessive thyroid activity  
Hypoglossal: under the tongue  
Hypothermic: body temperature below normal  
Iritis: inflammation of the iris  
Keratopathy: disorder of the eye  
Lacrimal gland: gland that secretes tears  
Lacrimal sac: sac that collects tears  
Laryngitis: inflammation of the voice box  
Laryngospasm: spasm of the voice box  
Macrocephalus: abnormally large head

Macrocheilia: abnormally large lips  
Macroglossia: abnormally large tongue  
Macrorhinia: abnormally large nose  
Macrotia: abnormally large ears  
Malaise: not feeling well  
Myelocoele: herniation of the spinal cord  
Neuralgia: painful nerve  
Neurofibroma: tumor containing nerve tissue  
Neurosclerosis: hardening of a nerve tissue  
Neurospasm: spasm of a nerve  
Otalagia: ear pain  
Otorrhea: discharge from the ear  
Pyrexia: fever  
Retina: complex membranous lining that receives the light rays in the eye  
Retinitis: inflammation of the retina  
Retinopathy: disease of the retina  
Rhinitis: inflammation of the nose  
Rhinorrhea: discharge from the nose  
Stomatagia: painful mouth  
Stomatitis: inflammation of the mouth  
Stomatorrhagia: hemorrhage of the mouth  
Tachyphasia: abnormally fast speech  
Tinnitus: ringing in the ears  
Tracheotomy: temporary opening in the trachea  
Vertigo: sensation of spinning

**Cardiac: Heart, Veins, and Arteries**

Angiorrhhexis: rupture of a blood vessel  
Angiosclerosis: hardening of a blood vessel  
Angiospasm: spasm of a vessel  
Arteriomalacia: softening of the arteries  
Arteriosclerosis: hardening of the arteries  
Arteriospasm: spasm of the arteries  
Bradycardia: slow heartbeat  
Cardiac arrest: cessation of heart function  
Cardialgia: heart pain  
Cardiomegaly: enlarged heart

Cardiorrhesis: rupture of the heart  
Carditis: inflammation of the heart  
Coronary thrombosis: blood clot in the coronary vessels  
Defibrillation: utilizing an electrical impulse to restore a regular heartbeat  
Electrocardiogram: record of electrical heart impulses  
Endocarditis: inflammation of the inside of the heart  
Embolism: sudden obstruction of a blood vessel  
Embolus: foreign particle in circulation  
Fibrillation: fast, irregular heartbeat  
Phlebitis: inflammation of the vein  
Phleborrhesis: rupture of a vein  
Phleboscrosis: hardening of the veins  
Phlebotomy: incision into the vein  
Tachycardia: fast heartbeat  
Thrombectomy: excision of a thrombus  
Thrombosis: condition caused by a clot

**Respiratory: Lungs**

Apnea: without breathing  
Bradypnea: slow breathing  
Bronchitis: inflammation of the bronchus  
Bronchospasm: spasm of the bronchus  
Cheyne-Stokes: breathing pattern characterized by cyclical hyperpnea followed by apnea  
Cyanosis: abnormal blue color  
Dyspnea: difficult/painful breathing  
Hemoptysis: hemorrhage of the lungs  
Hemothorax: blood in the chest cavity  
Hyperpnea: respirations > 25 r/min in an adult  
Intercostal: space between the ribs  
Paroxysmal dyspnea: sudden, recurring episode of difficult breathing  
Pleurisy: pain in the pleura  
Pleuritis: inflammation of the pleura  
Pneumonitis: serious disease of the lung  
Pneumothorax: air in the chest cavity  
Singultus: hiccough



Tachypnea: fast breathing

Thoracentesis: puncture of the thorax

**Chest: Shoulders to Diaphragm, Excluding Heart and Lungs**

Gynecomastia: abnormally large mammary glands in a male

Mastadenitis: inflammation of the mammary gland

Mastadenoma: tumor of the mammary gland

Mastectomy: surgical removal of the breast

Mastitis: inflammation of the breast

Mastocarcinoma: cancerous tumor of the mammary gland

Mastodynia: painful breast

Mastopathy: disease of the mammary gland

Mastoptosis: pendulous breasts

Thoracotomy: incision into the chest cavity

**Abdomen: Abdominal**

Abdominocentesis: abdominal fluid removal with a needle

Anorexia: loss of appetite

Cyanoderma: blue skin

Edema: accumulation of fluid in the body tissues

Erythroderma: red skin

Melanocarcinoma: black, malignant tumor

Melanoderma: black discolored skin

Orexia: appetite

Peritoneum: tough membrane covering the abdominal organs

Peritonitis: inflammation of the peritoneum

**GI: Gastrointestinal**

Cholecystectomy: surgical removal of the gallbladder

Cholecystitis: inflammation of the gallbladder

Cholemesis: bile in emesis

Coloclysis: irrigation of the colon

Colostomy: surgical opening into the colon

Duodenitis: inflammation of the duodenum

Dyspepsia: painful or poor digestion

Emesis: product of vomiting

Enterectasia: dilation of the small intestine

Enterocoele: herniation of the small intestine  
Enteroclysis: irrigation of the small intestine  
Enterorrhexis: rupture of the small intestine  
Esophagoduodenostomy: opening formed between the esophagus and duodenum  
Gastralgia: stomach pain  
Gastritis: inflammation of the stomach  
Gastroectasia: dilation of the stomach  
Gastroenteric: pertaining to the stomach and small intestine  
Gastroenterostomy: surgical opening between the stomach and small intestine  
Hematemesis: blood in emesis  
Hepatitis: inflammation of the liver  
Hepatomegaly: enlarged liver  
Hepatorrhagia: hemorrhage of the liver  
Hyperemesis: excessive vomiting  
Megalogastria: enlarged stomach  
Nausea: sensation or desire to vomit  
Pancreatectomy: excision of all or part of the pancreas  
Pancreatitis: inflammation of the pancreas  
Pancreatolith: pancreatic stone  
Proctolysis: irrigation of the rectum and anus  
Rectocele: rectal hernia  
Rectoclysis: irrigation of the rectum  
Rectocolitis: inflammation of the rectum and colon

**GU: Genitourinary**

Amniocentesis: puncturing the amniotic sac and removing amniotic fluid  
Amniotic fluid: liquid surrounding the fetus  
Antepartum: period of time in pregnancy before labor begins  
Colpitis: inflammation of the vagina  
Colpospasm: vaginal spasm  
Cryptorchidism: undescended testicles  
Cystitis: inflammation of the bladder  
Cystorrhagia: bladder hemorrhage  
Cystorrhexis: rupture of the bladder  
Cystotomy: temporary opening in the bladder

Ectopic: pregnancy outside the uterus  
Embryo: complex organism eight weeks following conception  
Fetus: product of conception from nine weeks to delivery  
Gestation: pregnancy  
Hysterectomy: surgical removal of the uterus  
Hysteroptosis: sagging of the uterus  
Hysterospasm: spasm of the uterus  
Involution: uterus returning to its pre-pregnant size and shape  
Metritis: inflammation of the uterine tissues  
Metrorrhagia: uterine hemorrhage  
Metrorrhea: mucous or pus discharge from the uterus  
Nephroplasty: surgical repair of the kidney  
Nulliparous: woman who has never been pregnant  
Oligohydramnios: too little amniotic fluid  
Oophorectomy: surgical removal of the ovary  
Oophoritis: inflamed ovary  
Oophoroma: ovarian tumor  
Orchiditis: inflammation of the testicle  
Orchidotomy: testicular incision  
Ovum: female egg  
Perineum: area between vaginal opening and anus in a female or scrotum and anus in a male  
Polyhydramnios: too much amniotic fluid  
Polyuria: excessive amounts of urine  
Postpartum: period of time following the birth of a baby  
Prenatal care: care given to a pregnant woman before childbirth  
Primigravida: first pregnancy  
Pudendum: female external sex organs  
Pyelitis: inflammation of the renal pelvis  
Pyelonephritis: inflammation of the renal pelvis and kidney  
Salpingectomy: excision of the fallopian tube  
Salpingitis: inflammation of the fallopian tube  
Spermatozoon: male germ cell  
Ureterolith: stone in the ureter  
Ureterolithotomy: surgical removal of a stone in the ureter  
Ureteropyelitis: inflammation of the ureter and renal pelvis  
Urethrospasm: spasm of the urethra

**Ext: Extremities**

Acrocyanosis: abnormal blue color of the extremities

Acrodermatitis: inflammation of the extremity skin

Acromegaly: enlarged extremities

Arthritis: inflammation of the joints

Arthrotoomy: temporary opening in a joint

Atrophy: underdevelopment of the tissues

Chondrodysplasia: defective development of cartilage

Chondromalacia: softened cartilage

Cyanoderma: abnormal blue color of the skin

Dactylitis: inflammation of a digit

Dactylospasm: spasm of a digit

Dermatitis: inflammation of the skin

Dermatosis: abnormal skin condition

Hyperplasia: overdeveloped

Hypertrophy: overdeveloped tissues

Hypoplasia: underdeveloped

Kinesialgia: pain on movement

Luekoderma: abnormal white color of the skin

Macroactylia: abnormally large fingers

Myofibroma: tumor containing muscle tissue

Myosclerosis: hardening of a muscle tissue

Myospasm: spasm of a muscle

Osteochondritis: inflammation of the bone and cartilage

Osteochondrodysplasia: defective formation of bone and cartilage

Peripheral: away from the center of the body

Polyarthritis: inflammation of many joints

Polydactylism: too many finger/toes

Polyneuralgia: pain in many nerves

Syndactylism: joining of one or more digits

Tendonitis: inflammation of the tendons

# Review Sheets by Chapter

## Chapter 1: Review Sheet

### Part 1

Cover the column of words on the right. In the space provided write the meaning of each word part listed in the left column. Check your answers.

Word Part	Meaning	(Hide This Column)
acr/o-	_____	extremity
megal/o-	_____	enlargement
dermat/o-	_____	skin
cyan/o-	_____	blue
derm/o-	_____	skin
leuk/o-	_____	white
-itis	_____	inflammation
cardi/o-	_____	heart
gastr/o-	_____	stomach
cyt/o-	_____	cell
-ologist	_____	one who studies
-algia	_____	pain
-ectomy	_____	excision
-otomy	_____	incision
-ostomy	_____	new opening
duoden/o-	_____	duodenum
electr/o-	_____	electricity
-ology	_____	study of
-osis	_____	condition of
-tome	_____	instrument that cuts
gram/o-	_____	record
eti/o-	_____	cause of
path/o-	_____	disease

**Part 2**

Cover the word parts in the right-hand column. In the space provided write a suffix or word part that expresses the meaning of each word in the left column. Check your answers.

<b>Meaning</b>	<b>Word Part</b>	<b>(Hide This Column)</b>
record	_____	gram/o-
one who studies (suffix)	_____	-ologist
enlargement	_____	megal/o-
electric	_____	electr/o-
white	_____	leuk/o-
incision into (suffix)	_____	-otomy
blue	_____	cyan/o-
instrument that cuts (suffix)	_____	-tome
stomach	_____	gastr/o-
extremity	_____	acr/o-
(abnormal) condition of (suffix)	_____	-osis
changes due to disease	_____	path/o-
new opening formed (suffix)	_____	-ostomy
skin	_____	dermat/o-, dermat
study of (suffix)	_____	-ology
heart	_____	cardi/o-
excision (suffix)	_____	-ectomy
inflammation of (suffix)	_____	-itis
duodenum	_____	duoden/o-
pain (suffix)	_____	-algia
cell	_____	cyt/o-
cause of	_____	eti/o-

## Chapter 2: Review Sheet

### Part 1

Cover the column of words on the right. In the space provided write the meaning of the word parts listed in the left column. Check your answers.

Word Part	Meaning	(Hide This Column)
aden/o-	_____	gland
carcin/o-	_____	cancer
malac/o-	_____	soft, softened
-oid	_____	resembling
laryng/o-	_____	larynx
cephal/o-	_____	head
hyper-	_____	excessive, more than normal
-cele	_____	herniation
ost/o-, oste/o-	_____	bone
arthr/o-	_____	joint
chondr/o-	_____	cartilage
cost/o-	_____	rib
lip/o-	_____	fat
inter-	_____	between
dent/o-, dont/o	_____	tooth
-emesis	_____	vomiting
-oma	_____	tumor
-plast/o, -plast/y	_____	repair
hypo-	_____	under, less than normal
troph/o-	_____	development
morph/o-	_____	structure and form
muc/o-	_____	mucus
onc/o-	_____	tumor
hist/o-	_____	tissue(s)
en-, endo-	_____	inside, within
ex-, exo-	_____	out, completely outside

**Part 2**

Cover the column on the right while you work. In the space provided, write the word part or combining form that matches the definition listed in the left column.

<b>Meaning</b>	<b>Word Part</b>	<b>(Hide This Column)</b>
rib	_____	cost/o-
larynx	_____	laryng/o-
development	_____	troph/o-
cancer	_____	carcin/o-
repair (suffix)	_____	-plast/o(/y)
tooth	_____	dent/o-, dont/o
mucus	_____	muc/o-
under, less than normal	_____	hypo-
herniation (suffix)	_____	-cele
soft, softened	_____	malac/o-
gland	_____	aden/o-
tumor (suffix)	_____	-oma
bone	_____	oste/o-
vomiting (suffix)	_____	-emesis
head	_____	cephal/o-
joint	_____	arthr/o-
between (prefix)	_____	inter-
resembling (suffix)	_____	-oid
fat	_____	lip/o-
inside, within (prefix)	_____	en-, endo-
cartilage	_____	chondr/o-
excessive, more than normal (prefix)	_____	hyper-
tissue	_____	hist/o-
structure and form	_____	morph/o-
tumor(s)	_____	onc/o-
out, completely outside (prefix)	_____	ex-, exo-



## Chapter 3: Review Sheet

### Part 1

Cover the column of words on the right. In the space provided write the meaning of each word part listed in the left column. Check your answers.

Word Part	Meaning	(Hide This Column)
cyst/o-	_____	bladder
-ar	_____	pertaining to
crani/o-	_____	cranium (skull)
dipl/o-	_____	double
ab-	_____	away from
cocc/i-	_____	coccus
metr/o, meter-	_____	measure
py/o-	_____	pus
-genesis, gen/o-	_____	produce, originate
-orrhoea	_____	flow
ot/o-	_____	ear
-centesis	_____	puncture
rhin/o-	_____	nose
lith/o-	_____	stone or calculus
hydro-	_____	water
chol/e-	_____	gall, bile
thorac/o-	_____	thorax or chest
pelv/i-	_____	pelvis
ad-	_____	toward
abdomin/o-	_____	abdomen
therap/o-	_____	treatment
cephal/o-	_____	head, cranium
phob/ia	_____	fear
cardi/o	_____	heart

**Part 2**

Cover the word parts on the right. In the space provided write a term that expresses the meaning of each word in the left column. Check your answers.

<b>Meaning</b>	<b>Word Part</b>	<b>(Hide This Column)</b>
water, watery fluid	_____	hydro-
flow, discharge (suffix)	_____	-orrhea
abnormal fear	_____	phob/ia
double, pairs	_____	dipl/o-
head	_____	cephal/o
pelvis	_____	pelv/i-
gall, bile	_____	chol/e-
nose	_____	rhin/o-
puncture of a cavity (suffix)	_____	-centesis
pus	_____	py/o-
treatment	_____	therap/o-
toward the midline (prefix)	_____	ad-
produce, originate (suffix, prefix)	_____	-genesis, gen/o-
bladder	_____	cyst/o-
coccus	_____	cocc/i-, cocc/o
measure	_____	metr/o-, meter-
stone or calculus	_____	lith/o-
ear	_____	ot/o-
thorax or chest	_____	thorac/o-
cranium (skull)	_____	crani/o-
away from the midline (prefix)	_____	ab-
abdomen	_____	abdomin/o-

## Chapter 4: Review Sheet

### Part 1

Cover the right-hand column. Write the meaning of each word or word part in the left column. Be sure to check your answers.

<b>Word/ Word Part</b>	<b>Meaning</b>	<b>(Hide This Column)</b>
-peps/ia	_____	digestion
neur/o-	_____	nerve
blast/o-	_____	immature cell form, germ cell
a-, an-	_____	without
angi/o-	_____	vessel
-spasm	_____	twitching, spasm
scler/o-	_____	hard, hardened
aneurysm	_____	ballooning-out vessel
fibr/o-	_____	fibrous, fiber
lys/o-	_____	destruction, dissolution
arteri/o-	_____	artery
men/o-	_____	menses, menstruation
hemat/o-, hemo-	_____	blood
kinesi/o-	_____	movement
spermat/o-	_____	spermatozoon, spermatozoa (plural)
oophor/o-	_____	ovary
-pexy	_____	fixation
salping/o-	_____	fallopian tube
dys-	_____	bad, painful, difficult
hyster/o-	_____	uterus
-ptosis	_____	prolapse, drooping
anomaly	_____	irregularity, breaks the rule
ur/o-	_____	urine
nephr/o-	_____	kidney
pyel/o-	_____	renal pelvis
ureter/o-	_____	ureter

*(continued on next page)*

-orrhaphy	_____	to suture, repair
urethr/o-	_____	urethra
-orrhagia	_____	hemorrhage
colp/o-	_____	vagina
crypt/o-	_____	hidden
orchid/o-	_____	testis, testes (plural)
hernia	_____	protrusion through cavity wall

**Part 2**

Cover the word parts on the right. In the space provided write a term that expresses the meaning of each word in the left column. Check your answers.

<b>Meaning</b>	<b>Word/Word Part</b>	<b>(Hide This Column)</b>
artery	_____	arteri/o-
vessel	_____	angi/o-
uterus	_____	hyster/o-
movement	_____	kinesi/o-
destruction, dissolution	_____	lys/o-
blood	_____	hemat/o-, hem/o-
protrusion through cavity wall	_____	hernia
urine	_____	ur/o-
hard, hardening	_____	scler/o-
fallopian tube	_____	salping/o-
muscle	_____	my/o-
without (prefix)	_____	a-, an-
nerve	_____	neur/o-
surgical fixation (suffix)	_____	-pexy
germ cell (immature)	_____	blast/o-
ballooning-out vessel	_____	aneurysm
ovary	_____	oophor/o-
digestion	_____	-peps/ia
prolapse, drooping	_____	-ptosis
bad, painful, difficult (prefix)	_____	dys-
spermatozoa (pl.)	_____	spermat/o-
fibrous, fiber	_____	fibr/o-
twitching (suffix)	_____	-spasm
fast, rapid (prefix)	_____	tachy-
hemorrhage (suffix)	_____	-orrhagia
renal pelvis	_____	pyel/o-
vagina	_____	colp/o-
ureter	_____	ureter/o-
kidney	_____	nephr/o-

*(continued on next page)*

irregularity, breaks the rule	_____	anomaly
urethra	_____	urethr/o-
to suture, repair (suffix)	_____	-orrhaphy
hidden	_____	crypt/o-
testes (pl.)	_____	orchid/o-
menses, menstruation	_____	men/o-

Congratulations!

## Chapter 5: Review Sheet

### Part 1

Cover the right-hand column. Write the meaning of each word or word part in the left column. Be sure to check your answers.

<b>Word/ Word Part</b>	<b>Meaning</b>	<b>(Hide This Column)</b>
stomat/o-	_____	mouth
gloss/o-	_____	tongue
cheil/o-	_____	lips
gingiv/o-	_____	gums
esophag/o-	_____	esophagus
enter/o-	_____	small intestine
-scope	_____	instrument to look, examine
col/o-	_____	colon
rect/o-	_____	rectum
proct/o-	_____	anus and rectum
hepat/o-	_____	liver
pancreat/o-	_____	pancreas
clys/o, -clysis	_____	wash, irrigate
-ectasia	_____	dilation, stretching
-spasm	_____	twitching, cramping
dent/o-	_____	teeth, tooth
toxin	_____	poison, poisoning
hypo-	_____	under, beneath
hyper-	_____	excessive
-algia	_____	pain, ache
-osis	_____	abnormal, diseased condition
-ostomy	_____	surgery to form a new opening (permanent)
-otomy	_____	incision into
-ectomy	_____	surgical removal of
-pexy	_____	surgical fixation of a part in its normal place

**Part 2**

Cover the word parts on the right. In the space provided write a term that expresses the meaning of each word in the left column. Check your answers.

<b>Meaning</b>	<b>Word/Word Part</b>	<b>(Hide This Column)</b>
cramping, twitching	_____	spasm
liver	_____	hepat/o-
excessive (prefix)	_____	hyper-
small intestine	_____	enter/o-
surgical incision into (suffix)	_____	-otomy
surgery to form a new opening (suffix)	_____	-ostomy
pertaining to teeth	_____	dental
rectum and anus	_____	proct/o-
lips	_____	cheil/o-
wash, irrigate (suffix)	_____	-clysis
esophagus	_____	esophag/o-
colon	_____	col/o-
gums	_____	gingiv/o-
mouth	_____	stomat/o-
pain, ache (suffix)	_____	-algia
dilation, stretching (a suffix)	_____	-ectasia
pancreas	_____	pancreat/o-
rectum	_____	rect/o-
tongue	_____	gloss/o-
surgical fixation of a part in normal place (suffix)	_____	-pexy
look, examine (suffix)	_____	-scopy



## Chapter 6: Review Sheet

### Part 1

Cover the right-hand column. Write the meaning of each word or word part listed in the left-hand column in the space provided. Be sure to check your answers.

Word/ Word Part	Meaning	(Hide This Column)
phleb/o-	_____	vein
dys-	_____	bad, difficult, painful
-orrhexis	_____	rupture, bursting apart
-esthesia	_____	sensation, feeling
fibrillation	_____	very rapid heartbeat
-algnesia	_____	sensation of pain
phas/o-	_____	speech
thrombosis	_____	occlusion of a blood vessel by a blood clot
-tripsy	_____	surgical crushing
plas/o-	_____	formation, development
syn-, sym	_____	together as one
a-, an-	_____	without, absent
embolus	_____	foreign particle floating in bloodstream
dactyl/o-	_____	fingers, toes, digits
cardiac arrest	_____	cessation of heartbeat
-emia	_____	blood
embolism	_____	vessel occluded, blocked by an embolus
myel/o-	_____	spinal cord or bone marrow
poly-	_____	many
micro-	_____	very small, microscopic
defibrillation	_____	restoration of regular heartbeat (often with electric shock)
thrombus	_____	blood clot in the bloodstream

**Part 2**

Cover the word parts on the right. In the space provided write a term that expresses the meaning of each word in the left column. Check your answers.

<b>Meaning</b>	<b>Word/Word Part</b>	<b>(Hide This Column)</b>
a blood clot in the bloodstream	_____	thrombus
sensation, feeling	_____	-esthesia
speech	_____	phas/o-
sensation of pain	_____	-algesia
vein	_____	phleb/o-
vessel occluded by an embolus	_____	embolism
restoration of regular heartbeat, often by electric shock	_____	defibrillation
foreign particle circulating in the bloodstream	_____	embolus
formation, development in the sense of shaping, molding	_____	plas/o-
rupture, bursting apart (suffix)	_____	-orrhexis
bad, difficult, painful (prefix)	_____	dys-
surgical crushing (suffix)	_____	-tripsy
very, very small (prefix)	_____	micro-
large, seen by human eye (prefix)	_____	macro-
bone marrow or spinal cord	_____	myel/o-
finger or toe, digit	_____	dactyl/o-
many (prefix)	_____	poly-
together as one (prefix)	_____	syn-, sym-
very fast heartbeat	_____	fibrillation
blood (suffix)	_____	-emia

## Chapter 7: Review Sheet

### Part 1

Cover the right-hand column. Write the meaning of each word or word part listed in the left-hand column in the space provided. Be sure to check your answers.

<b>Word/ Word Part</b>	<b>Meaning</b>	<b>(Hide This Column)</b>
edema	_____	fluid in the tissues
chronic	_____	long, drawn-out disease
syndrome	_____	symptoms occur together
prognosis	_____	prediction of course and outcome of disease
acute	_____	pertaining to severe symptom, rapid onset, short course
paroxysmal	_____	pertaining to sudden periodic attack
diagnosis	_____	identification of disease
tinnitus	_____	ringing in the ear
malaise	_____	vague sensation of not feeling well
vertigo	_____	sensation of turning around in space
anorexia	_____	loss of appetite
symptom	_____	perceived change in body or functions
pyrexia	_____	feverishness
mortality	_____	pertaining to being mortal
morbidity	_____	pertaining to being diseased
hypertrophy	_____	overdevelopment
atrophy	_____	wasting away, shrinking of an organ

*(continued on next page)*

systemic	_____	pertaining to the whole body, all systems
vital signs	_____	T, P, and R
peripheral	_____	pertaining to the outside surface of the body
chlor/o-	_____	green
melan/o-	_____	black
erythr/o-	_____	red
xanth/o-	_____	yellow
prophylactic	_____	pertaining to prevention of disease
prodromal	_____	pertaining to phase of disease before symptoms
nausea	_____	seasickness, inclined to vomit
palliative	_____	pertaining to relief of symptoms, not cure
against (prefix)	_____	anti-
dyspnea	_____	difficult, painful breathing
hypothermia	_____	subnormal temperature, below 90°F

**Part 2**

Cover the word parts on the right. In the space provided write a term that expresses the meaning of each word in the left column. Check your answers.

<b>Meaning</b>	<b>Word Part</b>	<b>(Hide This Column)</b>
symptoms and signs occur together	_____	syndrome
prediction of course and outcome of disease	_____	prognosis
pertaining to severe symptom, rapid onset, short course	_____	acute
wasting away, shrinking of an organ	_____	atrophy
pertaining to the whole body, all systems	_____	systemic
T, P, and R	_____	vital signs
fluid in the tissues	_____	edema
long, drawn-out disease	_____	chronic
pertaining to sudden periodic attack	_____	paroxysmal
identification of disease	_____	diagnosis
ringing in the ear	_____	tinnitus
vague sensation of not feeling well	_____	malaise
sensation of turning around in space	_____	vertigo
loss of appetite	_____	anorexia
perceived change in body or functions	_____	symptom
statistic pertaining to being diseased	_____	morbidity

*(continued on next page)*

pertaining to relief of symptoms, not cure	_____	palliative
fever	_____	pyret/o-, pyrexia
pertaining to phase of disease before symptoms	_____	prodromal
pertaining to prevention of disease	_____	prophylactic
yellow	_____	xanth/o-
red	_____	erythr/o-
seasickness, inclined to vomit	_____	nausea
black	_____	melan/o-
green	_____	chlor/o-
pertaining to the outside surface of the body	_____	peripheral
breathing reaches a climax, then ceases before starting again	_____	Cheyne-Stokes respiration
difficult, painful breathing	_____	dyspnea
overdevelopment	_____	hypertrophy
statistic pertaining to being mortal	_____	mortality
feverishness	_____	pyret/o-, pyrexia
loss of appetite	_____	anorexia
symptoms occurring before the onset of the disease	_____	prodrome

## Chapter 8: Review Sheet

### Part 1

Cover the right-hand column. Write the meaning of each word or word part listed in the left-hand column in the space provided. Be sure to check your answers.

<b>Word/ Word Part</b>	<b>Meaning</b>	<b>(Hide This Column)</b>
supra-, super-	_____	above, over
cyst	_____	closed sac containing fluid
neoplasm	_____	new tissue growth, no purpose
lesion	_____	unhealthy, diseased tissue
infra- ectopic	_____ _____	below, beneath, under outside the normal place
ect/o-	_____	outside
papule, papula	_____	raised red spot, pimple
peri-, circum-	_____	around, about, nearby
ventral	_____	on or near the belly
epi-	_____	over, upon, surrounding
distal	_____	point farthest from trunk
dorsal	_____	on or near the back
epigastric	_____	area of the belly over the stomach
proximal	_____	point nearest to the trunk
papilloma	_____	nipple-shaped tumor on skin
lateral	_____	farther from the midline
infiltration	_____	slipping into and between normal cells

*(continued on next page)*

sub-, hypo- excrescence	_____	below, beneath outgrowth, wart
medial	_____	nearer to the midline
papilla	_____	small, nipple-like protuberance
condyloma	_____	perianal wartlike growth
benign	_____	not spreading, not malignant
end/o- malignant	_____	inner, inside bad kind, threatening death
tumor, neoplasm	_____	new, abnormal tissue growth
metastasis	_____	cells spread to new location
polyp	_____	tumor on a little foot, or stem
circumscribed	_____	as a line drawn around, edge
mes/o-	_____	middle



**Part 2**

Cover the word parts on the right. In the space provided write a term that expresses the meaning of each word in the left column. Check your answers.

<b>Meaning</b>	<b>Word Part</b>	<b>(Hide This Column)</b>
new, abnormal tissue growth	_____	tumor
cells spread to new location	_____	metastasis
middle (prefix)	_____	mes/o-
point nearest to the trunk	_____	proximal
perianal wartlike growth	_____	condyloma
not spreading, not malignant	_____	benign
inner, inside (prefix)	_____	end/o-
bad kind, threatening death	_____	malignant
closed sac containing fluid	_____	cyst
as a line drawn around, edge	_____	circumscribed
area of the belly over the stomach	_____	epigastric
new tissue growth, no purpose	_____	neoplasm
unhealthy, diseased tissue	_____	lesion
beneath the patella	_____	subpatellar, infrapatellar
outside the normal place	_____	ectopic
raised red spot, pimple	_____	papule, papula
around, circular (prefix)	_____	circum-
on or near the belly	_____	ventral

*(continued on next page)*

above the pubic arch	_____	suprapubic
below, beneath, under (prefix)	_____	infra-, sub-, hypo-
on or near the back	_____	dorsal
slipping into and between normal cells	_____	infiltration
tumor on a little foot	_____	polyp
over, surrounding (prefix)	_____	epi-
around, about, nearby (prefix)	_____	peri-
under the skin	_____	hypodermic
point farthest from trunk	_____	distal
nipple-shaped tumor on skin	_____	papilloma
farther from the midline	_____	lateral
removal and examination of living tissue	_____	biopsy

## Chapter 9: Review Sheet

### Part 1

Cover the right-hand column. Write the meaning of each word or word part listed in the left-hand column in the space provided. Be sure to check your answers.

<b>Word/ Word Part</b>	<b>Meaning</b>	<b>(Hide This Column)</b>
conception	_____	union of ovum and spermatozoon
ovum	_____	female egg cell
peritoneum	_____	thin membrane that coats the viscera and lines the abdominal wall
secundi- fetus	_____ _____	second developing child in utero
spermatozoon	_____	male germ cell
parturition	_____	labor and delivery of term pregnancy
multi- nulli- postpartum	_____ _____ _____	many none time period after giving birth
mastopathy hysterorrhexis	_____ _____	breast disease rupture of uterus (life-threatening)
metratrophy anteartum	_____ _____	uterine atrophy time period before labor
prenatal oligo- hydramnios	_____ _____ _____	before childbirth scanty amount of amniotic fluid
mamm/o-, mast/o- amniot/o-	_____ _____ _____	breast amnion (sac for fetus and fluid)
-atrophy	_____	wasting of an organ or part

*(continued on next page)*

primipara	_____	a woman who has given birth for the first time
-dynia	_____	pain, painful
-mania	_____	madness
-phobia	_____	excessive fear
-gravida	_____	heavy with child; a pregnant woman
men/o-	_____	menses, menstruation
involution	_____	process of uterus returning to nonpregnant state
climacteric	_____	change of life period
placenta	_____	organ that nourishes fetus in utero
gynecomastia	_____	enlarged breasts in a male
puerperium	_____	period after childbirth; involution takes place
pudenda	_____	female external genitals
gestation	_____	another term for pregnancy
amniocentesis	_____	puncture of amniotic sac and removal of fluid
perineum	_____	pelvic floor; region from vaginal lip to anus in female

**Part 2**

Cover the word parts on the right. In the space provided write a term that expresses the meaning of each word in the left column. Check your answers.

<b>Meaning</b>	<b>Word Part</b>	<b>(Hide This Column)</b>
female external genitals	_____	pudenda
menses, menstruation	_____	men/o-
madness (suffix)	_____	-mania
female egg cell	_____	ovum
wasting of an organ or part (suffix)	_____	-atrophy
another term for pregnancy	_____	gestation
puncture of amniotic sac and removal of fluid	_____	amniocentesis
enlarged breasts in a male	_____	gynecomastia
breast disease	_____	mastopathy
breast (2 combining forms)	_____	mast/o-, mamm/o-
none (prefix)	_____	nulli-
many (prefix)	_____	multi-
developing child in utero	_____	fetus
male germ cell	_____	spermatozoon
cessation of menses	_____	menopause
pregnant woman, first time	_____	primigravida
incision of vagina and pelvic outlet	_____	episiotomy
excessive fear (prefix)	_____	phobia-
pain, painful (suffix)	_____	-dynia, -algia
process of uterus returning to nonpregnant state	_____	involution
rupture of uterus (life-threatening)	_____	hysterorrhexis

*(continued on next page)*

woman who has given birth to a living child	_____	para
pelvic floor; region from vaginal lip to anus in female	_____	perineum
period after childbirth; involution takes place	_____	puerperium
amnion (sac for fetus and fluid)	_____	amni/o-, amniot/o-
organ that nourishes fetus in utero	_____	placenta
few, little, scanty (prefix)	_____	oligo-
before labor	_____	ante partum
change-of-life period	_____	climacteric
physician specialist in diseases of women	_____	gynecologist
before (prefix)	_____	pre-
after (prefix)	_____	post-
new, recent (prefix)	_____	neo-
labor and delivery of term pregnancy	_____	parturition
X ray examination of breast	_____	mammography
thin membrane that coats viscera and abdominal wall	_____	peritoneum
union of ovum and spermatozoon	_____	conception
uterine atrophy	_____	metrorrhy
pain, painful (suffix)	_____	-dynia, -algia
heavy with child; a pregnant woman	_____	gravida

## Chapter 10: Review Sheet

### Part 1

Cover the right-hand column. Write the meaning of each word or word part listed in the left-hand column in the space provided. Be sure to check your answers.

Word/ Word Part	Meaning	(Hide This Column)
scler/o-	_____	hard white coat of the eye
ir, irid/o-	_____	iris, donut-shaped color of the eye
dipl/o-	_____	double, paired
ophthalm/o-	_____	eye
retin/o-	_____	retina, complex membrane on the inside back surface of the eyeball
core-, core/o-	_____	pupil, circular opening in the center of the eye
lacrim/o-	_____	tear, tears
kerat/o-, corne/o-	_____	cornea, transparent covering of anterior one-sixth of the eye
-opia	_____	suffix meaning vision
cycl/o-	_____	ciliary body, controls the shape of the iris

**Part 2**

Cover the word parts on the right. In the space provided write a term that expresses the meaning of each word in the left column. Check your answers.

<b>Meaning</b>	<b>Word Part</b>	<b>(Hide This Column)</b>
iris	_____	ir-, irid/o-
cornea, transparent anterior covering of one-sixth of the eye	_____	kerat/o-, corne/o-
suffix meaning vision	_____	-opia
retina, complex membrane on the inside back surface of the eyeball	_____	retin/o-
eyelid	_____	blephar/o-
tear, tears	_____	lacrim/o-
pupil, circular opening in the center of the eye	_____	cor-, core-, core/o-
ciliary body, controls shape of the iris	_____	cycl/o-
hard white coat of the eye	_____	scler/o-
double, paired	_____	dipl/o-
eye	_____	ophthalm/o-



## Chapter 11: Review Sheet

### Part 1

Cover the right-hand column. Write the meaning of each word or word part listed in the left-hand column in the space provided. Be sure to check your answers.

<b>Word/ Word Part</b>	<b>Meaning</b>	<b>(Hide This Column)</b>
nas/o-	_____	nose
pharyng/o-	_____	pharynx, throat
laryng/o-	_____	larynx, voice box
pneumon/o-	_____	lung
bronch/o-	_____	bronchus(i), branches of the trachea
pleur/o-	_____	pleura, covering on the lungs
pne/o-	_____	breathing, breathe
ment/o-	_____	chin
thorac/o-	_____	thorax, chest
pneum/o-	_____	air, gases
trache/o-	_____	windpipe, trachea
singultus	_____	hiccup, hiccough
hemoptysis	_____	spitting of blood derived from the lungs, bronchi
diaphragm	_____	musculo-membranous wall separating the abdomen from the thorax
epistaxis	_____	nosebleed

**Part 2**

Cover the word parts on the right. In the space provided write a term that expresses the meaning of each word in the left column. Check your answers.

<b>Meaning</b>	<b>Word Part</b>	<b>(Hide This Column)</b>
nose	_____	nas/o-
breathing, breathe	_____	pne/o-
larynx, voice box	_____	laryng/o-
nosebleed	_____	epistaxis
spitting blood derived from the lungs, trachea	_____	hemoptysis
musculomembranous wall separating the abdomen from the thorax	_____	diaphragm
air, gases	_____	pneum/o-
pleura, covering on the lungs	_____	pleur/o-
windpipe, trachea	_____	trache/o-
pharynx, throat	_____	pharyng/o-
bronchus(i), branches of the trachea	_____	bronch/o-
lung	_____	pneumon/o-
thorax, chest	_____	thorac/o-
chin	_____	ment/o-
hiccup, hiccough	_____	singultus

Congratulations on finishing your lessons.

Take the Final Tests after some rest and relaxation.

# Final Self-Test I

## Instructions

The following two tests will show you how much you have learned about medical terminology. Many of the words on the tests will be new to you; however, using the word parts and the word-building system you have learned, you should be able to give the meaning for all of them. Try these tests and see how well you do. You may want to take one test before reading the book and the other after you finish the book. The comparison will show even more clearly how much medical terminology you have learned.

Each test consists of 50 medical terms. For each term, write out a definition in your own words. Then compare your answers with those following the test. Your definition should include all of the ideas (though not necessarily in the exact words) as the definitions on the answer page.

1. Tachypnea \_\_\_\_\_
2. Oophoritis \_\_\_\_\_
3. Pyelonephrosis \_\_\_\_\_
4. Pathogenic \_\_\_\_\_
5. Bradycardia \_\_\_\_\_
6. Cycloparalysis \_\_\_\_\_
7. Glossoplegia \_\_\_\_\_
8. Megalodontia \_\_\_\_\_
9. Ophthalmoscopy \_\_\_\_\_
10. Bronchopneumonogram \_\_\_\_\_
11. Mammopexy \_\_\_\_\_
12. Cystocele \_\_\_\_\_
13. Cephalometer \_\_\_\_\_
14. Herniorrhaphy \_\_\_\_\_
15. Hyperthyroidism \_\_\_\_\_
16. Bronchiectasis \_\_\_\_\_

17. Mastodynia \_\_\_\_\_
18. Xanthemia \_\_\_\_\_
19. Symptomatology \_\_\_\_\_
20. Etiology \_\_\_\_\_
21. Kinesialgia \_\_\_\_\_
22. Fibroosteoma \_\_\_\_\_
23. Anuria \_\_\_\_\_
24. Lipochondroma \_\_\_\_\_
25. Costectomy \_\_\_\_\_
26. Ureteroenterostomy \_\_\_\_\_
27. Metrorrhagia \_\_\_\_\_
28. Paranephritis \_\_\_\_\_
29. Blepharoptosis \_\_\_\_\_
30. Erythrocyte \_\_\_\_\_
31. Perianal \_\_\_\_\_
32. Endocarditis \_\_\_\_\_
33. Lymphadenoid \_\_\_\_\_
34. Thoracolumbar \_\_\_\_\_
35. Corneoiritis \_\_\_\_\_
36. Hysterorrhexis \_\_\_\_\_
37. Thrombogenesis \_\_\_\_\_
38. Hematemesis \_\_\_\_\_
39. Lithotripsy \_\_\_\_\_
40. Oligohydramnios \_\_\_\_\_
41. Prostatic hypertrophy \_\_\_\_\_
42. Hemoptysis \_\_\_\_\_
43. Dorsalgia \_\_\_\_\_
44. Endocranial \_\_\_\_\_
45. Parturition \_\_\_\_\_
46. Adenocarcinoma \_\_\_\_\_
47. Esophagogastrostomy \_\_\_\_\_
48. Enterohepatitis \_\_\_\_\_
49. Malaise \_\_\_\_\_
50. Dyspnea \_\_\_\_\_

**Answers to Final Self-Test I**

1. rapid breathing
2. inflammation of an ovary
3. condition (abnormal or diseased) of the pelvis of the kidney
4. that which is capable of causing disease
5. slow heart rate
6. paralysis of the ciliary body
7. paralysis of the tongue
8. excessively large teeth
9. examination of the interior of the eye
10. X ray of the bronchi and lungs
11. surgical fixation of a breast to its normal position
12. hernia of the bladder
13. instrument for measuring the head
14. suturing (repair) of a hernia
15. condition caused by excessive secretion of the thyroid glands
16. dilatation of the bronchi
17. painful breast
18. yellow pigment (color) in the blood
19. the study (science) of disease symptoms
20. the study of causes of disease
21. painful muscular movement
22. tumor of bone and fibrous connective tissue
23. absence of urine
24. tumor of cartilaginous and fatty tissue
25. excision of a rib or ribs
26. make a permanent opening between the ureter and intestine
27. uterine hemorrhage
28. inflammation of tissues around (surrounding) the kidney
29. drooping of an eyelid
30. red blood cell
31. of or pertaining to around the anus
32. inflammation of the inside (lining) of the heart
33. resembling a lymph gland
34. of or pertaining to the chest (thorax) and lower back (lumbar)
35. inflammation of the iris and cornea
36. rupture of the uterus
37. formation (development) of a clot (thrombus)
38. vomiting blood
39. crushing removal of a stone
40. scanty amniotic fluid
41. pertaining to enlargement of the prostate
42. spitting blood (from trachea, bronchi, or lungs)
43. pain in the back
44. of, or pertaining to, the inside of the head
45. labor and childbirth
46. malignant tumor of a gland
47. making a new opening (permanent) between the esophagus and the stomach
48. inflammation of the liver and intestine
49. vague sensation of not feeling well
50. difficult or painful breathing

# Final Self-Test II

1. Mastoptosis \_\_\_\_\_
2. Epistaxis \_\_\_\_\_
3. Amenorrhea \_\_\_\_\_
4. Antipyretic \_\_\_\_\_
5. Nephrolith \_\_\_\_\_
6. Enterectasia \_\_\_\_\_
7. Paroxysmal \_\_\_\_\_
8. Encephalorrhagia \_\_\_\_\_
9. Craniocoele \_\_\_\_\_
10. Anorexia \_\_\_\_\_
11. Gingivoglossitis \_\_\_\_\_
12. Cholecystitis \_\_\_\_\_
13. Abdominalgia \_\_\_\_\_
14. Arteriospasm \_\_\_\_\_
15. Adenosclerosis \_\_\_\_\_
16. Duodenohepatic \_\_\_\_\_
17. Endobronchoscopy \_\_\_\_\_
18. Iridoplegia \_\_\_\_\_
19. Tracheostomy \_\_\_\_\_
20. Syndactyly \_\_\_\_\_
21. Phleborrhhexis \_\_\_\_\_
22. Cryptorchidism \_\_\_\_\_
23. Thromboid \_\_\_\_\_
24. Electroencephalogram \_\_\_\_\_
25. Myelodysplasia \_\_\_\_\_
26. Singultus \_\_\_\_\_

- 
27. Intercostal \_\_\_\_\_
  28. Epigastric \_\_\_\_\_
  29. Urethrocystitis \_\_\_\_\_
  30. Hypothyroidism \_\_\_\_\_
  31. Traumatology \_\_\_\_\_
  32. Pericardiectomy \_\_\_\_\_
  33. Syndrome \_\_\_\_\_
  34. Hepatorrhaphy \_\_\_\_\_
  35. Megalodactylism \_\_\_\_\_
  36. Nephropexy \_\_\_\_\_
  37. Pneumonmelanosis \_\_\_\_\_
  38. Cerebrovascular \_\_\_\_\_
  39. Chondromalacia \_\_\_\_\_
  40. Amniocentesis \_\_\_\_\_
  41. Inframammary \_\_\_\_\_
  42. Leukocytolysis \_\_\_\_\_
  43. Salpingectomy \_\_\_\_\_
  44. Hemodialysis \_\_\_\_\_
  45. Metastasis \_\_\_\_\_
  46. Cyanopia \_\_\_\_\_
  47. Ophthalmopathy \_\_\_\_\_
  48. Pneumohemothorax \_\_\_\_\_
  49. Otorhinolaryngologist \_\_\_\_\_
  50. Primagravida \_\_\_\_\_

**Answers to Final Self-Test II**

1. pendulous, drooping breast
2. nosebleed
3. cessation of menstruation
4. a substance that counteracts (acts against) the effects of a fever
5. a stone (calculus) in the kidney
6. dilatation (stretching) of the small intestine
7. of, or pertaining to, a sudden recurrent onset of a condition (convulsions)
8. hemorrhage within the brain
9. hernia of structures in the skull (cranium)
10. loss of appetite
11. inflammation of the gums and tongue
12. inflammation of the gallbladder
13. painful abdomen
14. spasm (twitching) of an artery
15. condition of hardening of glandular tissue
16. of, or pertaining to, the duodenum and liver
17. examination of the inside of the bronchi
18. paralysis of the iris
19. making a new permanent opening in the trachea
20. webbing or fusion of fingers or toes
21. rupture of a vein
22. condition due to hidden (undescended) testes
23. resembling a blood clot
24. record (picture) of electrical activity in the brain
25. abnormal development of the spinal cord
26. hiccup, hiccough
27. between the ribs
28. of, or pertaining to, area of belly over stomach
29. inflammation of the urethra and bladder
30. condition of insufficient thyroid excretion
31. the study (science) of injuries and their effect on the body
32. excision of tissue around the heart
33. a group of symptoms occurring together
34. suturing (repairing) the liver
35. condition of abnormally large fingers and toes
36. surgical fixation of the kidney in its normal place
37. condition of black lungs, black lung disease
38. of, or pertaining to, the vessels of the brain
39. condition of softened cartilage tissue
40. puncture of the amniotic sac and withdrawing of fluid
41. below the breast
42. destruction of white blood cells
43. surgical removal of the fallopian tube
44. removal of toxic waste products from the blood
45. spreading of a malignant disease to another organ or location
46. blue vision
47. abnormal condition of the eyes
48. air and blood in the chest cavity
49. physician specialist in ear, nose, and voice box diseases
50. a woman pregnant for the first time



# Appendix A

## Medical Abbreviations

<b>ā</b>	before
<b>ad lib.</b>	freely as desired ( <i>ad libitum</i> )
<b>ADL</b>	activities of daily living
<b>AMA</b>	against medical advice
<b>BBT</b>	basal body temperature
<b>bid; b.i.d.</b>	twice a day ( <i>bis in die</i> )
<b>BM</b>	bowel movement
<b>BMR</b>	basal metabolic rate
<b>BP</b>	blood pressure
<b>bpm</b>	beats per minute
<b>BRP</b>	bathroom privileges
<b>BSE</b>	breast self-examination
<b>BUN</b>	blood urea nitrogen
<b>Bx</b>	biopsy
<b>C</b>	carbon; Celsius
<b>c̄</b>	with
<b>Ca</b>	calcium; cancer
<b>CABG</b>	coronary artery bypass graft
<b>CAD</b>	coronary artery disease
<b>cath</b>	catheter
<b>CBC</b>	complete blood count
<b>CHD</b>	congenital heart disease; coronary heart disease
<b>CHF</b>	congestive heart failure
<b>CNS</b>	central nervous system
<b>c/o</b>	complaints of
<b>CO<sub>2</sub></b>	carbon dioxide
<b>COPD</b>	chronic obstructive pulmonary disease

<b>CP</b>	cerebral palsy; cleft palate
<b>CPR</b>	cardiopulmonary resuscitation
<b>CT</b>	computed tomography
<b>CV</b>	cardiovascular; closing volume
<b>CVA</b>	cerebrovascular accident; costovertebral angle
<b>CXR</b>	chest x-ray
<b>DIC</b>	disseminated intravascular coagulation
<b>DKA</b>	diabetes ketoacidosis
<b>DM</b>	diabetes mellitus, diastolic murmur
<b>DNA</b>	deoxyribonucleic acid
<b>DNR</b>	do not resuscitate
<b>dr</b>	dram
<b>DTR</b>	deep tendon reflex
<b>D5W</b>	dextrose 5% in water
<b>Dx</b>	diagnosis
<b>ECG; EKG</b>	electrocardiogram, electrocardiograph
<b>ECHO</b>	echocardiography
<b>EEG</b>	electroencephalogram, electroencephalograph
<b>EENT</b>	eye, ear, nose & throat
<b>EOM</b>	extraocular movement
<b>FBS</b>	fasting blood sugar
<b>Fe</b>	iron
<b>Fl, fld</b>	fluid
<b>fl dr</b>	fluid dram
<b>fl oz</b>	fluid ounce
<b>fx</b>	fracture
<b>Gm; g; gm</b>	gram
<b>GFR</b>	glomerular filtration rate
<b>GI</b>	gastrointestinal
<b>gr</b>	grain
<b>h.</b>	hour
<b>H &amp; P</b>	history and physical
<b>Hb; Hgb</b>	hemoglobin
<b>HBV</b>	hepatitis B virus
<b>HCT</b>	hematocrit

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<b>Hgb</b>	hemoglobin
<b>HIV</b>	human immunodeficiency virus (AIDS virus)
<b>h/o</b>	history of
<b>HEENT</b>	Head, ears, eyes, nose, throat
<b>HT; HTN</b>	hypertension
<b>hx; Hx</b>	history
<b>I &amp; O</b>	intake and output
<b>IBW</b>	ideal body weight
<b>ICP</b>	intracranial pressure
<b>ICU</b>	intensive care unit
<b>IDDM</b>	insulin-dependent diabetes mellitus
<b>IM</b>	intramuscular; infectious mononucleosis
<b>IV</b>	intravenous
<b>IVP</b>	Intravenous push
<b>K</b>	potassium
<b>kg</b>	kilogram
<b>KVO</b>	keep vein open
<b>L</b>	left; liter; length; lumbar; lethal; pound
<b>lat.</b>	lateral
<b>LLE</b>	left lower extremity
<b>LLL</b>	left lower lobe
<b>LLQ</b>	left lower quadrant
<b>LOC</b>	level/loss of consciousness
<b>LP</b>	lumbar puncture
<b>LR</b>	lactated ringer's
<b>LUE</b>	left upper extremity
<b>LUL</b>	left upper lobe
<b>LUQ</b>	left upper quadrant
<b>mg</b>	milligram
<b>mcg</b>	microgram
<b>mL</b>	milliter
<b>mm</b>	millimeter, muscles
<b>mmHg</b>	millimeters of mercury
<b>MRI</b>	magnetic resonance imaging
<b>MVA</b>	motor vehicle accident

<b>N/A</b>	not applicable
<b>Na</b>	sodium
<b>NaCl</b>	sodium chloride
<b>N &amp; V; N/V</b>	nausea and vomiting
<b>NG; ng</b>	nasogastric
<b>NKA; NKDA</b>	no known allergies; no known drug allergies
<b>NPO; n.p.o.</b>	nothing by mouth ( <i>nil per os</i> )
<b>NS</b>	normal saline
<b>NSAID</b>	nonsteroidal anti-inflammatory drug
<b>O</b>	oxygen
<b>O2</b>	oxygen
<b>OOB</b>	out of bed
<b>OR</b>	operating room
<b>OT</b>	occupational therapy
<b>OTC</b>	over-the-counter
<b>oz; Z</b>	ounce
<b>p</b>	after
<b>P-A; P/A; PA</b>	posterior–anterior
<b>P &amp; A</b>	percussion and auscultation
<b>Pap test</b>	Papanicolaou smear
<b>PCA</b>	patient-controlled analgesia
<b>PERRLA</b>	pupils equal, round, react to light and accommodation
<b>PMH</b>	past medical history
<b>PMI</b>	point of maximal impulse
<b>PO; p.o.</b>	orally ( <i>per os</i> )
<b>PPD</b>	purified protein derivative (TB test)
<b>PRN; p.r.n.</b>	as required ( <i>pro re nata</i> )
<b>PSA</b>	prostate-specific antigen
<b>PT</b>	prothrombin time; physical therapy
<b>PTT</b>	partial thromboplastin time
<b>PVC</b>	premature ventricular contraction
<b>q.i.d.</b>	four times daily ( <i>quater in die</i> )
<b>qd</b>	once a day ( <i>quaque die</i> )
<b>Rx</b>	take
<b>RBC; rbc</b>	red blood cell; red blood count
<b>RDA</b>	recommended daily/dietary allowance

<b>RDS</b>	respiratory distress syndrome
<b>RLE</b>	right lower extremity
<b>RLL</b>	right lower lobe
<b>RLQ</b>	right lower quadrant
<b>RML</b>	right middle lobe of lung
<b>R/O</b>	rule out
<b>ROM</b>	range of motion
<b>ROS</b>	review of systems
<b>RR</b>	recovery room; respiratory rate
<b>RT</b>	radiation therapy; reading test; respiratory therapy
<b>R/T</b>	related to
<b>RUE</b>	right upper extremity
<b>RUL</b>	right upper lobe
<b>RUQ</b>	right upper quadrant
<b>̄s</b>	without
<b>SLE</b>	systemic lupus erythematosus
<b>SOB</b>	shortness of breath
<b>sol</b>	solution dissolve
<b>Sp.gr.; SG; s.g.</b>	specific gravity
<b>Staph</b>	<i>Staphylococcus</i>
<b>Stat</b>	immediately ( <i>statim</i> )
<b>STD</b>	sexually transmitted disease; skin test
<b>Sub Q</b>	subcutaneous injection
<b>Strep</b>	<i>Streptococcus</i>
<b>s/s</b>	signs & symptoms
<b>Sx</b>	symptoms
<b>Sym</b>	symmetrical
<b>T</b>	temperature
<b>Tab</b>	tablet
<b>TAH</b>	total abdominal hysterectomy
<b>T &amp; A</b>	tonsillectomy and adenoidectomy
<b>TB</b>	tuberculin; tuberculosis; tubercle bacillus
<b>t.i.d.</b>	three times a day ( <i>ter in die</i> )
<b>TPN</b>	total parenteral nutrition
<b>TPR</b>	temperature, pulse, respiration
<b>TSE</b>	testicular self-examination
<b>TSH</b>	thyroid-stimulating hormone

<b>Tx</b>	treatment
<b>UA</b>	urinalysis
<b>UE</b>	upper extremity
<b>Umb; umb</b>	umbilicus
<b>URI</b>	upper respiratory infection
<b>US</b>	ultrasound
<b>UTI</b>	urinary tract infection
<b>UV</b>	ultraviolet
<b>vol</b>	volume
<b>V.S.; v.s.</b>	vital signs
<b>WBC; wbc</b>	white blood cell; white blood count
<b>WN</b>	well nourished
<b>WNL</b>	within normal limits
<b>wt</b>	weight
<b>y, yr</b>	year
<b>y/o</b>	years old
<b>Z; oz</b>	ounce

# Appendix B

## Forming Plurals

The following chart contains information about the formation of plurals from the singular form. Use it to work on the frames that follow.

To Form Plurals	
If the singular ending is	The plural ending is
a	ae (pronounce ae as ī)
us	i
um	a
ma	mata
on	a
is	es
ix	ices
ex	ices
ax	aces
	} The word root is usually built from the plural forms of words ending in ix, ex, and ax (e.g., radix, radic/es, radic/otomy, radic/i/form).

bursae  
 bur' sī  
 conjunctivae  
 kon junk' tī vē  
 bacilli  
 bə sil' ē

1.  
 Form the plural of

bursa \_\_\_\_\_

conjunctiva \_\_\_\_\_

bacillus \_\_\_\_\_

vertebra  
 ver' tə bra  
 nucleus  
 nōō' klē us  
 cornea  
 kor' nē ə

2.  
 Give the singular form of

vertebrae \_\_\_\_\_

nuclei \_\_\_\_\_

corneas \_\_\_\_\_

atria  
ā' trē ə  
cocci  
kok' sē  
ilea  
(you pronounce)  
il' ē ə

3.  
Form the plural of  
atrium \_\_\_\_\_  
coccus \_\_\_\_\_  
ileum \_\_\_\_\_

enema  
en' ə mā  
bacterium  
ovum  
(you pronounce)

4.  
Give the singular form of  
enemata \_\_\_\_\_  
bacteria \_\_\_\_\_  
ova \_\_\_\_\_

cortices  
kor' ti sēz  
fibromata  
fī brō' mā tā  
protozoa  
prō' to zō' ə

5.  
Form the plural of  
cortex \_\_\_\_\_  
fibroma \_\_\_\_\_  
protozoon \_\_\_\_\_

stigma  
stig' mā  
prognosis  
prog nō' sis  
spermatozoon  
sper mat' ə zō ən

6.  
Give the singular form of  
stigmata \_\_\_\_\_  
prognoses \_\_\_\_\_  
spermatozoa \_\_\_\_\_

appendices  
(you pronounce)  
diagnoses  
dī ag nō' sēz  
ganglia  
gang' lē ä

7.  
Form the plural of  
appendix \_\_\_\_\_  
diagnosis \_\_\_\_\_  
ganglion \_\_\_\_\_

appendic

8.  
Refer to the table. Give the word root that usually refers to  
the appendix: \_\_\_\_\_.



cortic the cortex \_\_\_\_\_

thorac the thorax \_\_\_\_\_  
 (you pronounce)

9.

With this new knowledge, which you found for yourself, build a word meaning

appendic/itis inflammation of the appendix  
 a pen di sī' tis \_\_\_\_\_ / \_\_\_\_\_

cortic/al pertaining to the cortex  
 kor' ti kəl \_\_\_\_\_ / \_\_\_\_\_

thorac/o/centesis surgical puncture of the thorax  
 thor' ə kō sen tē' sis \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

10.

Form the plural of

apices apex \_\_\_\_\_

fornices fornex \_\_\_\_\_

varices varix \_\_\_\_\_

sarcomata sarcoma \_\_\_\_\_

septa septum \_\_\_\_\_

radii radius \_\_\_\_\_

maxillae maxilla \_\_\_\_\_  
 (you pronounce)

11.

There are other ways of forming plurals. They apply to only a few words. When you meet these words and have a question about how their plural forms are built, consult a medical dictionary.

# Appendix C

## Medical Measurements

Volume		
Unit	Abbreviation	Equivalency
Liter	L	
Kiloliter	kl	1 kl = 1000 l
Milliliter	ml	1 L = 1000 ml
Cubic centimeter	cc	1 cc = 1 ml
Ounce	oz	1 oz = 30 ml
Dram	dr	1 dr = 4 ml
Drops	gtts	1 cc = 15 to 16 gtts*
Tablespoon	T	1 T = 15 ml
Teaspoon	t	1 t = 5 ml

Weight		
Unit	Abbreviation	Equivalency
Gram	g	
Kilogram	kg	1 kg = 1000 g
Milligram	mg	1 g = 1000 mg
Microgram	mcg	1 mg = 1000 mcg
Grain	gr	1 gr = 60 mg
Pound	lb	1 lb = 0.45 kg
Ounce	oz	1 oz = 28.35 g

Length		
Unit	Abbreviation	Equivalency
Meter	m	
Kilometer	kl	1 kl = 1000 m
Centimeter	cm	1 cm = 10 mm
Millimeter	mm	1 m = 1000 mm
Inch	in	1 in = 2.54 cm
Foot	ft	1 ft = 0.305 m

\*Due to the different liquid surface tensions and specific gravity drop, conversions are approximations.

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