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)
- -otom y (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
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___________________________.

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 _____________.

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_____________________________

Figure 1.1 Acromegaly
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

\[\text{acrolmegaly}\]

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

\[\text{acro/megaly}\]

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 dermatologist is a specialist in the field of medicine who specializes in treating disease of the _____________.

Underline the word root in the following medical terms. Now, circle the suffix in each term.

<table>
<thead>
<tr>
<th>Term</th>
<th>Root</th>
<th>Suffix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dermatitis</td>
<td>dermat</td>
<td>-itis</td>
</tr>
<tr>
<td>Dermatologist</td>
<td>dermatologist</td>
<td>-ologist</td>
</tr>
</tbody>
</table>

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

\[\text{acroldermatitis}\]

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

13. Remembering that the term acrodermatitis means inflammation of the skin of the extremities, explain the following:

<table>
<thead>
<tr>
<th>Term</th>
<th>Root</th>
<th>Suffix</th>
</tr>
</thead>
<tbody>
<tr>
<td>dermatitis</td>
<td>dermat</td>
<td>-itis</td>
</tr>
<tr>
<td>skin</td>
<td>acrolmegaly</td>
<td>-ologist</td>
</tr>
</tbody>
</table>
14. 
Cyan/o means blue or blueness. The suffix -osis denotes an abnormal condition. Cyan/osis means an abnormal condition of blueness.

What do you think acr/o/cyan/osis means? ____________________

The part of the medical term that tells you the color blue is present is ____________________.

The part of the medical term denoting that an abnormal condition exists is the suffix ____________.

15.
To denote an abnormal condition, use the suffix ____________.

Acrocyanosis may be defined as the abnormal ________________ 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 __________ / _____ / __________ / __________.

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 ________________.

18.
Acrocyanosis means ________________.

19.
Dermat/osis denotes an abnormal skin condition. The suffix that means abnormal condition is ________________.

20.
The suffix -osis means (usually abnormal) condition. Now, build a term that means an abnormal condition of blueness: __________ / __________.
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>dermat/osis</td>
<td>Build a term meaning an abnormal skin condition:</td>
</tr>
<tr>
<td>dermatosis</td>
<td>___________________________ / ___________________________</td>
</tr>
<tr>
<td>der ma tō’sis</td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td></td>
</tr>
<tr>
<td>tomos</td>
<td>The Greek word tomos means a piece cut off. From this word we have many</td>
</tr>
<tr>
<td></td>
<td>words that refer to cutting: ectomy (cut out), otomy (cut into), -tome</td>
</tr>
<tr>
<td></td>
<td>(an instrument that cuts). A dermatome is an instrument that cuts</td>
</tr>
<tr>
<td></td>
<td>___________________________</td>
</tr>
<tr>
<td>skin</td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td></td>
</tr>
<tr>
<td>dermat/ome</td>
<td>A dermatome is a surgical instrument. When a physician wants a thin</td>
</tr>
<tr>
<td>dermatome</td>
<td>slice of a patient’s skin for a skin graft, the doctor asks for a</td>
</tr>
<tr>
<td>derm’ō tōm</td>
<td>___________________________ / ___________________________</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td></td>
</tr>
<tr>
<td>an abnormal condition</td>
<td>Dermat, dermat/o refer to the skin. Cyan/o/derm/a means</td>
</tr>
<tr>
<td>of bluish discolor-</td>
<td>___________________________</td>
</tr>
<tr>
<td>ation of the skin</td>
<td></td>
</tr>
<tr>
<td></td>
<td>___________________________</td>
</tr>
<tr>
<td>a disease or abnormal</td>
<td>Dermat/osis means ______________________________________________________</td>
</tr>
<tr>
<td>condition of the skin</td>
<td>___________________________</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>24.</td>
<td></td>
</tr>
<tr>
<td>cyan/o/derm/a</td>
<td>Cyanoderma sometimes occurs when people swim too long in cold water. If</td>
</tr>
<tr>
<td>cyanoderma</td>
<td>a patient has a bluish discoloration of the skin, for any reason, the</td>
</tr>
<tr>
<td>sī ə nō der’mā</td>
<td>person may exhibit ___________________________ / _____ / _______________ /</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>25.</td>
<td></td>
</tr>
<tr>
<td>leuk or leuk/o</td>
<td>Leuk/o means white or abnormally white. In the term leuk/o/derm/a, the</td>
</tr>
<tr>
<td></td>
<td>part that means white is ___________________________</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>26.</td>
<td></td>
</tr>
<tr>
<td>leuk/o/derm/a</td>
<td>Some people have much less color in their skin than is normal. Their</td>
</tr>
<tr>
<td>leukoderma</td>
<td>skin is white. They may have ___________________________ / _____ /</td>
</tr>
<tr>
<td>lōō kō der’ mā</td>
<td>_______________ / _____ / ___________________________ / _____</td>
</tr>
</tbody>
</table>
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.
white blood cell
A leukocyte is a __________________________.

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/cyte
leukocyte
lōō’ kō sit

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/card/i/a mean? __________________________

megal/o/card/i/a
megalocardia
meg ə lō kār’ dē ä

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/i/a
megalocardia
meg ə lō kār’ dē ä
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 megalocardia or cardiomegaly.

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)
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
\[ \text{enlarged} / \text{stomach} / \text{gastritis} \] or
\[ \text{stomach enlarged} / \text{oversized stomach} / \text{gas tr meg a le} \]

38. Megalocardia means _____________.

What does cardiomegaly mean? _________________.

39. The suffix *-itis* means inflammation.

Inflammation of the heart: What does carditis mean? _________________.

Stomach: Both gastr-, gastr/o mean _________________.

Inflammation of the stomach: 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 skin
- cutting instrument stomach
- enlarged, oversized white extremities
- acr/o
- cyan/o
- leuk/o
- gastr/o
- cyt/o
- cardi/o
<table>
<thead>
<tr>
<th>Terms</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>acro/megal/y</td>
<td>a condition of oversized extremities</td>
</tr>
<tr>
<td>leuko/cyte</td>
<td>a white cell</td>
</tr>
<tr>
<td>dermat/itis</td>
<td>inflammation of the skin</td>
</tr>
<tr>
<td>megalo/cardi/a</td>
<td>a condition of enlarged heart</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>cardio/megal/y</td>
<td></td>
</tr>
</tbody>
</table>

42.
Let’s have a change of pace here. Professional health workers use some special words to talk about illness and sick people. Here are just a few you’ll find very useful. Read each definition. Then underline a key word or words to help you remember the meaning of the term.

**Disease** is a condition in which bodily health is impaired. It means sickness or illness.

**Manifestation** is proof of impaired bodily health. It’s a display, exhibition, or physical evidence of disease.

**Pathology** is the scientific study of changes in the human body (structural and functional) produced by disease.

**Etiology** is the scientific study of causes of disease.

You may refer to the definitions if you need help answering the next few frames.

The cause of the patient’s disease is not yet known (and may remain unknown).

43.
If a physician says that a patient’s disease is of unknown etiology, what would that mean to you?
44. Another word for disease is ________________.

45. Manifestation is a display, or ________________, of disease.

46. Etiology is the scientific study of ________________ of disease.

47. Pathology is the scientific study of ________________ and changes in the body produced by disease.

48. Select the best term for each definition. Write your choice in the space provided.

pathology etiology manifestation disease

disease Another term for illness or sickness is ________________.

manifestation Evidence, or proof, of disease is ________________.

etiology The study of causes of disease is ________________.

pathology The scientific study of changes in the body produced by disease is ________________.

49. The suffix -ology means the study of, the suffix -ologist means one who studies (and becomes an expert). One who studies structural and functional changes in the body produced by disease is a ________________ / ________________.

50. Some physicians specialize in heart disease. The specialist who determines that a heart is deformed is a ________________ / ________________.
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.

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 ________________ / ________________.

52. Complete the meaning of electr/o/cardi/o/gram:

Gram means a record or recording, electr/o means ________________

_____________________________________________________

and cardi/o means ________________.

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 and learn something about a patient’s heart function. This specialist is probably a _______________ and can read an _______________.

55. The suffix -algia means pain. Form a word that means heart pain: __________________ / __________________.

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

57. Gastralgia means pain in the stomach. Gastr is the root for ________________.

58. Gastr/ectomy means excision (removal) of all or part of the stomach. Gastr means ________________.

cardiologist
electrocardiogram
cardi/algia
cardialgia
kär dē alˈjē ə (There is no need to add a vowel to the root cardi because -algia begins with a vowel.)
stomach
-algia
Gastr is the root for ________________.
The suffix for pain is ________________.

stomach
to cut out, excise, or remove surgically

The suffix -ectomy means ________________.
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

\[ \text{gastrotomy} \]

\[ \text{gastrectomy} \]

\[ \text{gastrik' tō mē} \]

(stomach) / (excision of)

60. Cancer of the stomach may require a surgeon to remove all or part of the patient’s stomach. This procedure is a ________________

61. Form a word that means inflammation of the stomach:

\[ \text{gastritis} \]

\[ \text{gas trī' tis} \]

62. The stomach empties its contents into the first section of the intestine, called the duodenum. Duoden is the word root for

\[ \text{duoden/um} \]

\[ \text{duodenum} \]

\[ \text{dōō dō' nēm (or dōō dē' nēm)} \]

63. What is the root for stomach? ________________

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

\[ \text{gastroduodenostomy} \]

\[ \text{gas' trō dōō dē' nos' tō mē} \]

65. When an abnormal condition exists between the stomach and the duodenum, a surgeon may need to perform a gastroduodenostomy, which means

______________________________
66. The suffix -ectomy means excision of; -ostomy means forming a new opening. The form -otomy means incision into. A duoden/otomy is an incision into the ________________.

67. The suffix for incision into is ________________.

If a physician makes an incision into the wall of the duodenum, the doctor has performed a ________________ / ________________.

68. The suffix for inflammation is ________________.

The word for inflammation of the duodenum is ________________ / ________________.

69. Duoden/al means of or pertaining to the duodenum.

-al is a suffix meaning of, or pertaining to. Therefore matern/al means ________________ and patern/al means ________________.

70. In the sentence “Duodenal carcinoma was present,” the word meaning of, or pertaining to, the duodenum is ________________ / ________.

71. The suffix –ostomy means making a new opening. The word to form a new opening into the duodenum is ________________ / ________________.

72. Here’s one for you to figure out. A duodenostomy can be formed in more than one manner. If it is formed with the stomach, it is called a ________________.

73. The suffix for forming a new opening is ________________.
74. Let’s review what you’ve covered. Using the suggested answers, write the meaning of each of the following terms.

**SUGGESTED ANSWERS:**

<table>
<thead>
<tr>
<th>term</th>
<th>meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>duodenum</td>
<td>duoden/o</td>
</tr>
<tr>
<td>changes due to disease</td>
<td>record of</td>
</tr>
<tr>
<td>cell</td>
<td>path/o</td>
</tr>
<tr>
<td>cause(s)</td>
<td>gram/o</td>
</tr>
<tr>
<td>enlarged, oversized</td>
<td>cyt/o</td>
</tr>
<tr>
<td>blueness</td>
<td>electr/o</td>
</tr>
<tr>
<td></td>
<td>eti/o</td>
</tr>
<tr>
<td></td>
<td>megal/o</td>
</tr>
<tr>
<td></td>
<td>cyan/o</td>
</tr>
</tbody>
</table>

75. Now try it with the suffixes you just learned.

**SUGGESTED ANSWERS:**

<table>
<thead>
<tr>
<th>term</th>
<th>meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>(abnormal) condition</td>
<td>incision into</td>
</tr>
<tr>
<td>of inflammation</td>
<td>cutting instrument</td>
</tr>
<tr>
<td>of, or pertaining to</td>
<td>inflammation of</td>
</tr>
<tr>
<td>pain</td>
<td>form a new opening</td>
</tr>
<tr>
<td>one who studies, specializes in</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-al</td>
</tr>
<tr>
<td></td>
<td>-itis</td>
</tr>
<tr>
<td></td>
<td>-osis, -a, -y</td>
</tr>
<tr>
<td></td>
<td>-ostomy</td>
</tr>
<tr>
<td></td>
<td>-tome</td>
</tr>
<tr>
<td></td>
<td>-otomy</td>
</tr>
<tr>
<td></td>
<td>-algia</td>
</tr>
<tr>
<td></td>
<td>-ologist</td>
</tr>
</tbody>
</table>
76.
Now build some new words.

**cyanosis**
A condition of blueness is ________ / ________.

**pathologist**
One who studies bodily changes produced by disease is a ________ / ________.

**duodenostomy**
A surgical procedure that forms a new opening in the duodenum is a ________ / ________.

**etiological**
A term meaning of, or pertaining to, the study of causes of disease is ________ / ________ / ________ / ________.

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 sīə nō’sis)
- acrodermatitis (ak rō der’ ma ti’tis)
- acromegaly (ak rō meg’ a lē)
- cardialgia (kär dē al’ jē a)
- cardiologist (kär dē ol’ə jist)
- carditis (kär dī’ tis)
- cyanoderma (sīə nō der’ mā)
- cyanosis (sīə nō’ sis)
- cytology (sī tol’ə jē)
- dermatologist (der ma tol’ə jist)
- dermatome (derm’ə tōm)
- dermatosis (der ma tō’ sis)
- disease (diz ē’z’)
- duodenal (dōō’ ə dē’ nəl)
- electrocardiogram (ē lek’ trō kär’ dē ə gram)

**etiological**
(e’ tē ə loj’ i kəl)

**gastralgia** (gas tral’ jē a)

**gastrectomy**
(gas trek’ tō mē)

**gastroenterostomy**
(gas’ trō dōō’ ə dē nos’ tō mē)

**leukemia** (lōō’ kē’ mē ə)

**leukocyte** (lōō’ kō sit)

**leukoderma** (lōō kō der’ mā)

**manifestation**
(man’ ə fes tə shən)

**megalocardiitis**
(meg ə lō kär’ dē ē)

**megalogastria**
(meg ə lō gas’ trē ē)

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

<table>
<thead>
<tr>
<th>Part 1</th>
<th>Part 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. d</td>
<td>1. disease</td>
</tr>
<tr>
<td>2. n</td>
<td>2. cyanoderma</td>
</tr>
<tr>
<td>3. e</td>
<td>3. leukocyte</td>
</tr>
<tr>
<td>4. o</td>
<td>4. megalogastria</td>
</tr>
<tr>
<td>5. b</td>
<td>5. manifestation</td>
</tr>
<tr>
<td>6. j</td>
<td>6. etiology</td>
</tr>
<tr>
<td>7. k</td>
<td>7. gastrectomy</td>
</tr>
<tr>
<td>8. i</td>
<td>8. duodenal</td>
</tr>
<tr>
<td>9. l</td>
<td>9. cyanosis</td>
</tr>
<tr>
<td>10. f</td>
<td>10. cardialgia</td>
</tr>
<tr>
<td>11. m</td>
<td>11. carditis</td>
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