

MODULE 1 Communication and Terminology for the Workplace

TOPIC 1 Introduction to Medical Terminology and
Pronunciation

LEARNING OUTCOMES:

By the end of this lesson, participants will be able to:

- ◆ analyze and define medical terminology
- ◆ apply spelling and pronunciation rules for medical terms

HEALTH CARE TERMINOLOGY WORKSHOP

TOPIC	SKILLS	CLB COMPETENCE AREA	COMPETENCIES	PRE-TASKS	TASK	POST TASK
<ul style="list-style-type: none"> ◆ Introduction to Medical Terminology and Pronunciation 	<ul style="list-style-type: none"> ◆ Listening/ Speaking ◆ Writing 	<ul style="list-style-type: none"> ◆ exchanging information 	<ul style="list-style-type: none"> ◆ understand components of medical terminology ◆ gain familiarity with rules for forming and spelling medical terms ◆ pluralize medical terms ◆ define medical terms by analyzing components ◆ define body parts using medical terminology and common everyday terms ◆ know and apply pronunciation rules 	<ul style="list-style-type: none"> ◆ define components of medical terms ◆ apply spelling rules to specific terms ◆ pluralize medical terms by applying rules ◆ define medical terms by understanding some common roots, suffixes and prefixes ◆ identify and define body parts ◆ apply pronunciation rules 	<ul style="list-style-type: none"> ◆ create medical terms with flashcards (game) 	N/A

Facilitator's Notes for Module 1**Topic 1: Introduction to Medical Terminology and Pronunciation****FACILITATOR PREPARATION*****Content***

Knowledge of common prefixes, suffixes, and root words of medical terminology is required. This lesson is different from the others in that it focuses exclusively on strategies for analyzing and understanding terminology. As a result, there is no real-world task; however, strategies learned in this lesson will be applied to pre-tasks and tasks in subsequent lessons. The task in this topic is a game, for which the instructor needs to create flash cards. The game also functions as an ice-breaker for the workshop.

Delivery

As many copies as required of the following handouts should be made:

- ◆ Introductory Handout 1
- ◆ Introductory Handout 2
- ◆ Handout 1 Basic Definitions
- ◆ Handout 2 Forming and Spelling Medical Terms
- ◆ Handout 3 Singular and Plural Forms
- ◆ Handout 4 Spelling of Singular and Plural Medical Terms
- ◆ Handout 5 Chart – Suffixes, Prefixes and Roots
- ◆ Handout 6 Defining Medical Terms
- ◆ Handout 7 Body Parts
- ◆ Handout 8 Definitions
- ◆ Handout 9 Pronunciation

Write out the spelling rules of pre-task #1 on chart paper and prepare terminology in pre-task #6 on chart paper (see Methodology).

Materials needed: Two overhead transparencies of Handout 7, access to a board or flip chart, overhead projector, flash cards (see Task in Methodology).

Course Introduction

- (15 minutes)** 1. Because this is the first class of the terminology workshop, participants may have some pre-conceived ideas and expectations about learning new vocabulary. Explain that there are ways to determine the meaning of medical terms. These strategies will be the focus of the first lesson, but the focus of the workshop as a whole will be on using terminology in different health care situations. It is important that participants get a clear idea of the way the course will be delivered and about the role of terminology within a task-based curriculum. For this reason, a Workshop Outline and Introductory Handouts 1 and 2 are provided. Before distributing the handouts, summarize the information for the participants. Ask what they think it means to know a word and give them our definition, perhaps using an example. Also, make sure participants understand that their participation and involvement are critical to the success of the workshop. After all, they are the experts. Distribute the handouts and go over the outline as a whole class. Have the participants read the introduction. Check for understanding and answer any questions.

Methodology

Introduction

- (10 minutes)** 1. Explain that the key to understanding medical terminology is to break it down into its component parts. A medical term is made up of common prefixes, suffixes, and roots. Most medical terms can be learned by analyzing each component. Write on the board or on chart paper the following words:

PREFIX ROOT SUFFIX

Most medical terms have at least a root and either a suffix or prefix. Many terms have all three components. Elicit from the class the meaning of the above three words and ask for examples.

Answers: A **prefix** is a structure at the beginning of a word that modifies the root or roots. Not all medical terms have a prefix.

i.e.: sub/hepat/ic

sub (which means under) is the prefix

A **root** is the foundation of the word. Each medical term is formed by combining at least one root with a suffix and/or a prefix.

i.e.: artr/itis

artr (which means joint) is the word root.

A **suffix** is an ending that modifies the root. Not all medical terms have a suffix.

i.e.: hepat/ic

ic (meaning pertaining to) is the suffix.

An example of all three is intra/ven/ous.

i.e.: intra (which means inside) is the prefix.

ven (which means vein) is the root.

ous (which means pertaining to) is the suffix.

The word intravenous means pertaining to inside of the veins.

2. Explain that when a medical term has more than one root, the roots are joined by a vowel, usually an o but sometimes an i.

i.e.: (i) bil / i / uria (*bile* + *urine*)

(o) gastr / o / pylorus (*stomach* + *pylorus*)

The vowels “i” and “o” are used to join root to root or root to suffix. This is done so often that the vowel is usually attached to the root. This is called a **combining form**. Write an example on the board to illustrate.

i.e.: hydrophobia (fear of the water)

urology (study of the urinary system)

Ask participants to match the definition with the correct word in Handout 1. Take up as a whole class.

Answers to Handout 1:

1) D 2) E 3) A 4) C 5) B

Pre-Tasks

(10 minutes) 1.

Rules for forming and spelling medical terms. Explain the five basic spelling rules and give examples on the board. The rules are as follows:

- a) A combining vowel is used to join root to root as well as root to any suffix beginning with a consonant.

i.e.: oste/o/arthr/o/pathy
(*disease of the bone and joint*)

- b) A combining vowel is not used before a suffix that begins with a vowel.

i.e.: ped/iatrics (*treatment of children*)

- c) If the root ends in a vowel and the suffix begins with the same vowel, drop the final vowel from the root and do not use a combining vowel.

i.e.: cardi/itis
carditis (*heart inflammation*)

- d) Usually a combining vowel is put between two roots even when the second root begins with a vowel.

i.e.: cardi/o/esophageal (*pertaining to the heart and esophagus*)

- e) Sometimes when a prefix ends in a vowel and the root begins with a vowel the final vowel is dropped from the prefix.

i.e.: para/enter/al
parenteral (*outside of or not through the alimentary canal*)

Have the rules prepared on chart paper so that participants can refer back to them. To check for comprehension ask participants to complete Handout 2. Take up with the whole class.

Answers to Handout 2

- 1)D 2)E, B 3)B 4)C 5)E, B 6)A
7)A 8)A 9)B 10)D,A

- (15 minutes)** 2. Explain how singular and plural forms of medical terms are formed. Most often plurals are formed by adding **s** or **es** to the end of the singular form. There are some exceptions. Distribute Handout 3 and read together with the whole class.
optional
- (30 minutes)** 3. Ask students to complete Handout 4 on singular and plural medical terms and take it up with the whole class.
optional
- (25 minutes)** 4. **Defining Medical Terms.** Explain that the meaning of the individual components combine to form the meaning of a medical term. As a general rule, begin by defining the suffix, then move to the root to complete the definition. Note that this does not apply to every medical term. Write a few examples on the board:

Oste/o/arthr/o/pathy
root/cv/root/cv/suffix

Begin by defining the word pathy then move to the beginning of the term. Answer – disease of bone (oste) and joint (arthr).

Cardi/o/pulmon/ary
root/cv / root /suffix

Answer – pertaining to the heart and lungs.

Epi/gastr/ic
prefix/root/suffix

Answer – pertaining to the stomach.

(20 minutes) 5. Ask participants to read the chart (Handout 5) on word parts and their definitions. Have them work with a partner and use the chart to define the medical terms in Handout 6. Take up the answers with the whole class.

(25 minutes) 6. Ask participants to look at the diagram of the body (Handout 7) and to label the body parts using common everyday terms, i.e., heart, lung, bone. Using a transparency of Handout 7 with an overhead projector, take up the answers with the whole class. Have the following root words written on chart paper (see below). Elicit the medical root words for body parts from the whole class and write the correct medical term on the overhead transparency. (You may want to use a second transparency of Handout 7.) Read the medical terms together to practise pronunciation.

Root Words:

cerebr/o	colon/o	pulmon/o
tonsill/o	pneum/o	phren/o
phleb/o	ovari/o	hepat/o
gastr/o	arteri/o	cholecyst/o
muscul/o	thyr/o	sinus/o
oste/o	cardi/o	laryng/o
appendic/o	enter/o	bronchi/o
vagin/o	balan/o	test/o

(20 minutes) 7. To reinforce the medical vocabulary on body parts ask participants to complete Handout 8. Take up with the whole class. Read the medical terms together to practise pronunciation.

(20 minutes) 8. Go over some of the general pronunciation rules with the class using Handout 9. Repeat the words (in Handout 8) as many times as it is necessary to help the participants pronounce them properly.

Task

1. The instructor needs to create flash cards to play the following game. The object of this game is to produce as many medical terms as possible using a selection of the roots, suffixes, and prefixes written on the flash cards. Divide the participants into teams of three to four. Each participant in the team draws ten cards: five roots, three suffixes, and two prefixes. Each participant should try to create one term using their cards. If this is not possible, members should exchange cards within their team. If the team fails to produce at least three terms they must exchange cards with another team. Team members should make as many terms as possible within a time limit determined by the facilitator.

Afterwards, a representative from each team writes their list of terms on the board. Different colors indicating the components of the terms can be used. The teams get points for each term that they list. The class decides if a term is “real” and if a team gets a point. The team with the most terms wins. Additional points can be scored if the team members can explain the term in lay person’s language.

Post-Task

To be determined by facilitator

1. Using flash cards for prefixes, suffixes, and roots, participants can practise learning medical terminology by manipulating the cards. In small groups or in pairs participants can go over the words together or individually and can test each other daily.

Introductory Handout 1

Outline of Health Care Terminology Workshop

Welcome to the Health Care Terminology Workshop. The terminology workshop is divided into three modules. Within each module there are between two and five three-hour lessons. This is the outline of the workshop:

Module 1 Communication and Terminology for the Workplace

- Topic 1 Introduction to Medical Terminology and Pronunciation
- Topic 2 Gathering Patient Information
- Topic 3 Describing Symptoms and Treatments 1
- Topic 4 Describing Symptoms and Treatments 2
- Topic 5 Giving Instructions in Medical Procedures

Module 2 Communication and Terminology for Work Search

- Topic 1 Understanding Job Ads: Skills and Personal Attributes
- Topic 2 Employment Interviews
- Topic 3 Cross-Cultural Problem-Solving

Module 3 Communication and Terminology for Professional Registration

- Topic 1 The Regulated Health Professions Act, 1991
- Topic 2 Application Procedures

Introductory Handout 2

Introduction to Health Care Terminology Workshop

The workshop classes have been organized so that participants will have many opportunities to perform oral and written language tasks using new terminology. You may find that you are familiar with some of the terminology in some topics. However, it is important to remember that knowing a word in English is much more than being able to recognize it or translate it into your own language. In order to know a word completely, you should be able to use it in six different ways. You should be able to pronounce it, spell it, know what it means in a particular context, and understand its indirect meanings. Also, you should be able to use it in grammatically correct sentences and know what other words it is typically associated with.

Because of the short length of the workshop, it is impossible to practise and know each new word in all six different ways. However, the class activities will give you opportunities to use health care and medical terminology and other language skills in different ways that will broaden and deepen your understanding and use of this terminology in the English language.

In each topic, terminology will be presented in context, meaning that words will be presented as they are actually used in the real world. For example, medical history charts and job ads contain terms and expressions that are commonly used in that context. Other activities will give you opportunities to analyze the language in different ways. For example, putting words into categories helps you remember them; finding synonyms expands your vocabulary knowledge and choice of words.

Each topic also contains a task. A task is a real world communicative act that is similar to those you will likely have to do outside of the class as part of your professional development. In the tasks, you will be given the opportunity to use terminology as you would in the real world. For example, you will become familiar with the registration terminology used to fill out an application for a professional licensing body. You will also learn how to communicate effectively with patients by using language that they would understand.

In designing this workshop, we have tried to keep in mind that you, as health care professionals, are experts in your occupation. Remember that the facilitator is here to help you express your ideas more clearly, but the success of the workshop depends on all of you sharing your professional expertise with each other.

At the end of some of the modules or lessons, you may be asked to complete a questionnaire. Your feedback will help us to keep improving the workshop. Thank you in advance for taking the time to complete the questionnaires.

Enjoy the terminology workshop!

Handout 1

Basic Definitions

Match the words in column A with the correct definition in column B.

COLUMN A	COLUMN B
1. root	A. The beginning of a word that modifies the root
2. suffix	B. A root with a vowel attached
3. prefix	C. A vowel that joins two roots
4. combining vowel	D. The base of a word
5. combining form	E. At the end of a root. It modifies and gives meaning to the root

Handout 2

Forming and Spelling Medical Terms

Look at the spelling rules listed on the board and identify which of the rules were applied when forming the following medical terms.

- 1) Oste + o + ectomy = osteoectomy
- 2) hype + ox + ia = hypoxia
- 3) angi + ectasis = angiectasis
- 4) arteri + itis = arteritis
- 5) para + umbilic + al = parumbilical
- 6) hemat + logy = hematology
- 7) gastr + scopy = gastroscopy
- 8) electr + cardi + gram = electrocardiogram
- 9) vas + ectomy = vasectomy
- 10) electr + encephal + gram = electroencephalogram

Handout 3

Singular and Plural Forms

Most often plurals are formed by adding **s** or **es** to the end of a singular form. The following are common exceptions.

SINGULAR		PLURAL	
Ending	Example	Ending	Example
-a	vertebra	-ae	vertebrae
-is	diagnosis	-es	diagnoses
-ma	condyloma	-mata	condylomata
-on	phenomenon	-a	phenomena
-um	bacterium	-a	bacteria
-us	fungus	-i	fungi
-ax	thorax	-aces	thoraces
-ex	apex	-ices	apices
-ix	appendix	-ices	appendices
-y	myopathy	-ies	myopathies

Source: Willis, M.C. (1996). Medical Terminology: The Language of Health Care. Baltimore: Williams and Wilkins.

Handout 4

Spelling of Singular and Plural Medical Terms

Write the plural of the following.

1. stoma
2. speculum
3. ampulla
4. bacterium
5. thrombus
6. angiосcopy

Write the singular of the following.

7. psychoses
8. indices
9. bronchi
10. maculae
11. phenomena
12. condylomata

FACILITATOR'S NOTES FOR HANDOUT 4

1. stomata
2. specula
3. ampullae
4. bacteria
5. thrombi
6. angioscopies
7. psychosis
8. index
9. bronchus
10. macula
11. phenomenon
12. condyloma

Handout 5

<p>ROOT WORDS</p> <p>cardi/o</p> <p>hepat/o</p> <p>pulmon/o</p> <p>nephr/o</p> <p>gastr/o</p> <p>tox/o</p> <p>audi/o</p>	<p>DEFINITION</p> <p>heart</p> <p>liver</p> <p>lung</p> <p>kidney</p> <p>stomach</p> <p>poison</p> <p>ear</p>
<p>SUFFIXES</p> <p>-logist</p> <p>-ac</p> <p>-ic</p> <p>-ary</p> <p>-algia</p> <p>-megaly</p> <p>-um</p>	<p>DEFINITION</p> <p>-one who specializes in the study or treatment of</p> <p>-pertaining to</p> <p>-pertaining to</p> <p>-pertaining to</p> <p>-pain</p> <p>-enlargement</p> <p>-membrane</p>
<p>PREFIXES</p> <p>endo-</p> <p>hypo-</p> <p>sub-</p>	<p>DEFINITION</p> <p>-lining</p> <p>-below or deficient</p> <p>-under</p>
<p>COMBINING VOWELS</p> <p>o</p>	

Source: Willis, M. C. (1996). Medical Terminology: The Language of Health Care, Baltimore: Williams and Wilkins.

Handout 6

Defining Medical Terms

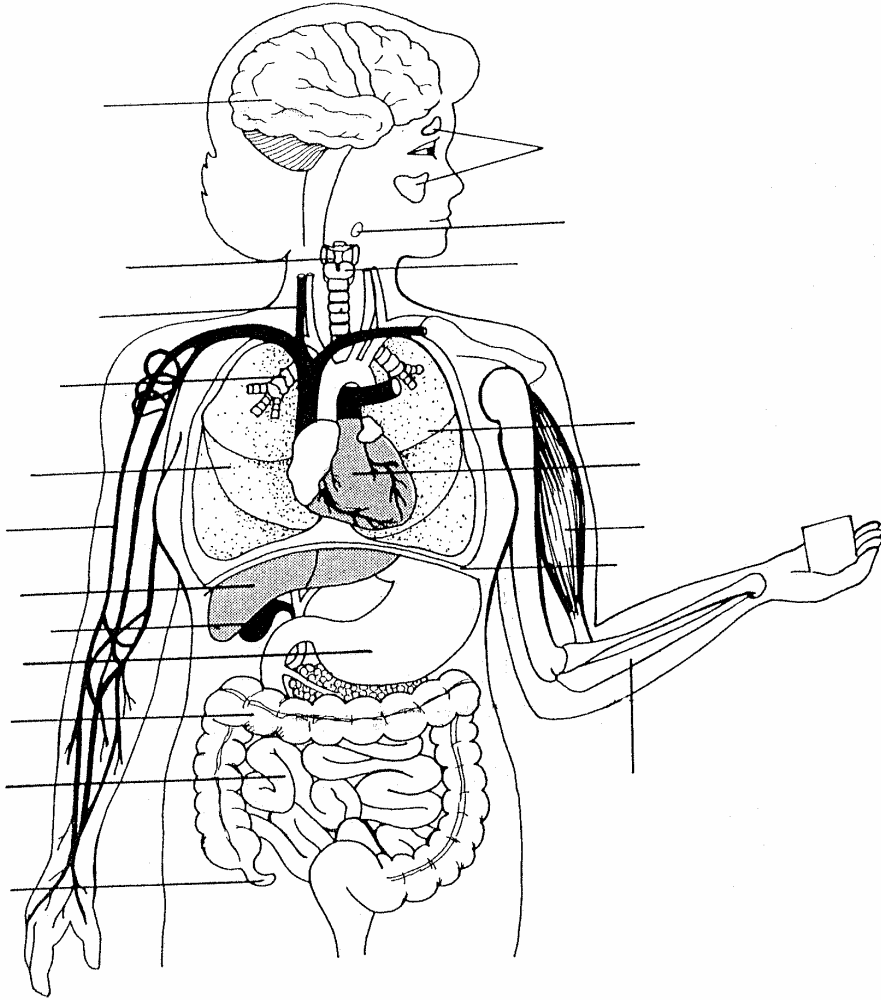
Working with a partner use the chart in Handout 5 to define the following medical terms.

1. cardiologist
2. hepatomegaly
3. cardiopulmonary
4. pulmonologist
5. nephrologist
6. hepatic
7. endogastric
8. hypogastric region
9. endocardium
10. cardiac
11. gastric
12. hepatotoxic

FACILITATOR'S NOTES FOR HANDOUT 6

1. one who specializes in the study of the heart
2. enlargement of the liver
3. pertaining to the heart and lungs
4. one who specializes in the study of the lungs
5. one who specializes in the study of the kidneys
6. pertaining to the liver
7. pertaining to the lining of the stomach
8. pertaining to the region below the stomach
9. pertaining to the lining of the heart chambers
10. pertaining to the heart
11. pertaining to the stomach
12. liver poisoning

Handout 7/ OHT



Female reproductive organs _____

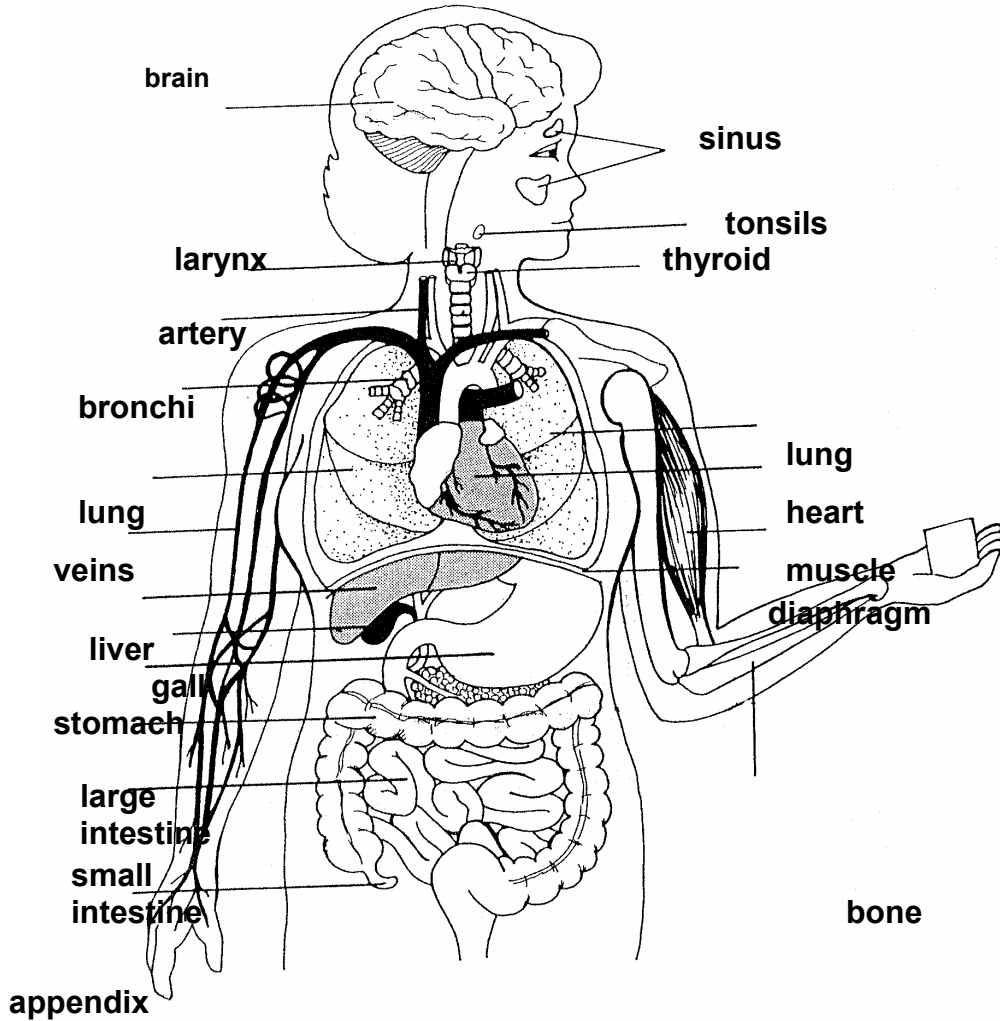
Male reproductive organs _____

Source: Carver, T.K., Fotinos, S.D, Cooper, C. (1993). *A Canadian Conversation Book 1*, Scarborough: Prentice Hall.

FACILITATOR'S NOTES FOR HANDOUT 7

Common Everyday Terms

Answers



Female reproductive organs

vagina

ovary

Male reproductive organs

penis

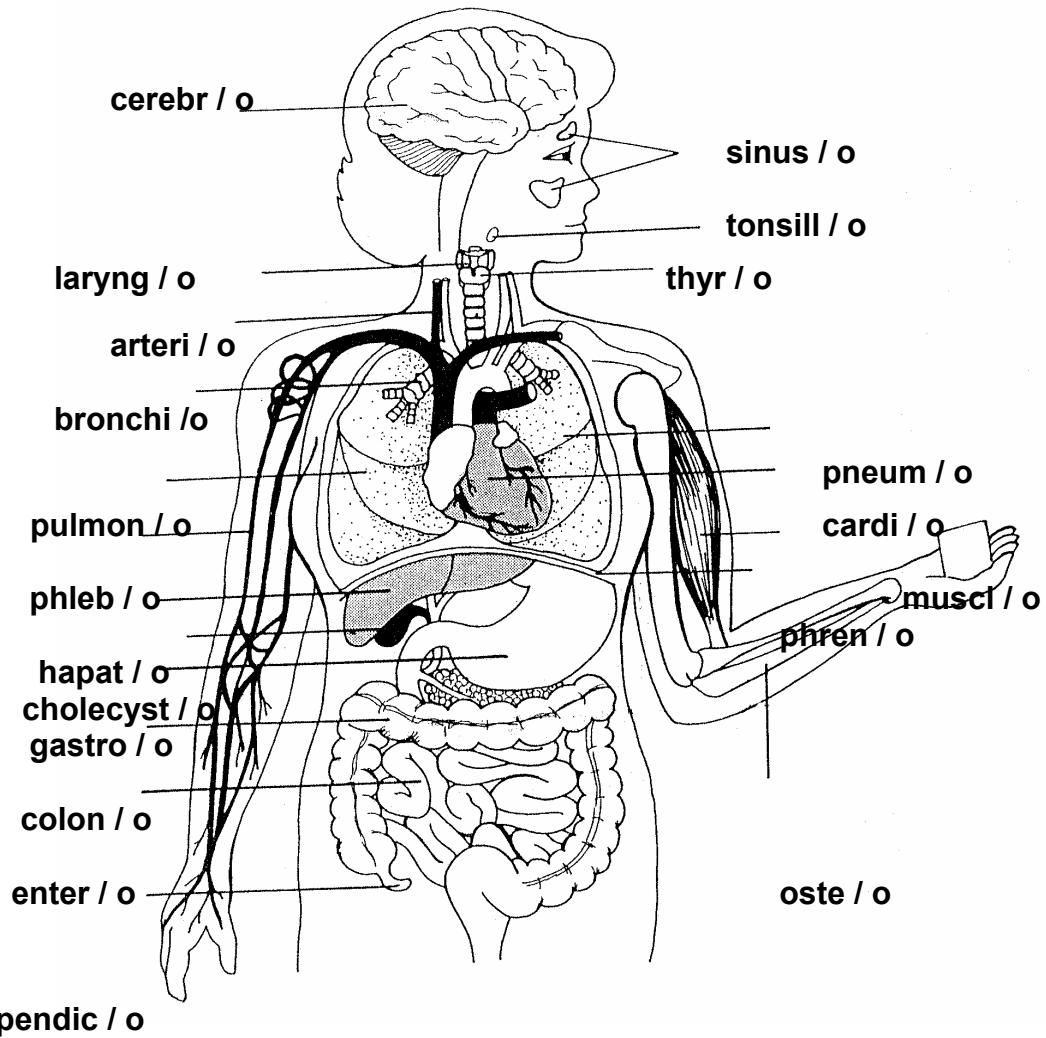
testicle

Source: Carver, T.K., Fotinos, S.D, Cooper, C. (1993). A Canadian Conversation Book 1, Scarborough: Prentice Hall

FACILITATOR'S NOTES FOR HANDOUT 7

Root Words – Medical Terms

Answers



Female reproductive organs

vagin/o

ovari/o

Male reproductive organs

balan/o

test/o

Source: Carver, T.K., Fotinos, S.D., Cooper, C. (1993). *A Canadian Conversation Book 1*, Scarborough: Prentice Hall

Handout 8

Definitions

Draw a line or lines to separate the prefixes, suffixes, and combining forms in the words in column A. Then match the terminology in Column A with a definition in Column B.

COLUMN A

1. cerebrospinal
2. tonsillitis
3. phlebitis
4. gastritis
5. muscular
6. osteoplasty
7. appendectomy
8. vaginal
9. pneumonic
10. ovarian
11. arteriostenosis
12. thyroidectomy
13. myocardium
14. balanoplasty
15. pulmonary embolism
16. phrenospasm
17. hepatomegaly
18. sinusitis

19. laryngospasm
20. bronchiocele
21. testicular

COLUMN B

- a) involuntary contractions of the larynx
- b) pertaining to the testicle
- c) pertaining to vagina
- d) repair of the penis
- e) inflammation of the vein
- f) pertaining to muscle
- g) the heart muscle
- h) enlargement of the liver
- i) pertaining to the ovaries
- j) excision of thyroid gland
- k) pertaining to the lungs
- l) inflammation of the tonsils
- m) repair of the bone
- n) condition of narrowing arteries
- o) inflammation of the stomach
- p) pertaining to brain and spine
- q) excision of the appendix
- r) involuntary contractions
of the diaphragm
- s) pouching or hernia of the bronchi
- t) inflammation of the sinuses
- u) blood clot in the lungs

FACILITATOR'S NOTES FOR HANDOUT 8

Definitions

Draw a line or lines to separate prefixes, suffixes and combining forms of the words in column A. Then match the terminology in Column A with a definition in Column B.

COLUMN A

1. cerebr/o/spinal p)
2. tonsillit/i/s l)
3. phleb/itis e)
4. gastr/itis o)
5. muscul/ar f)
6. oste/o/plasty m)
7. appendect/omy q)
8. vagin/al c)
9. pneum/o/nic k)
10. ovar/i/an i)
11. arteri/o/stenosis n)
12. thyroid/ectomy j)
13. my/o/cardium g)
14. balan/o/plasty d)
15. pulmon/ary emb/o/lism u)
16. phren/o/spasm r)
17. hepat/o/megaly h)
18. sinus/itis t)
19. laryng/o/spasm a)
20. bronchi/o/cele s)
21. testicu/lar b)

COLUMN B

- a) involuntary contractions of the larynx
- b) pertaining to the testicle
- c) pertaining to vagina
- d) repair of the penis
- e) inflammation of the vein
- f) pertaining to muscle
- g) the heart muscle
- h) enlargement of the liver
- i) pertaining to the ovaries
- j) excision of thyroid gland
- k) pertaining to the lungs
- l) inflammation of the tonsils
- m) repair of the bone
- n) condition of narrowing arteries
- o) inflammation of the stomach
- p) pertaining to brain and spine
- q) excision of the appendix
- r) involuntary contractions of the diaphragm
- s) pouching or hernia of the bronchi
- t) inflammation of the sinuses
- u) blood clot or foreign body in the lungs

Handout 9

Pronunciation

SHORTCUTS TO PRONUNCIATION	
Consonant	Example
c (before a, o, u) = k	cavity colon cure
c (before e, i) = s	cephalic cirrhosis
ch = k	cholesterol
g (before a, o, u) = g	gallstone gonad gut
g (before e, i) = j	gerontology giant
ph = f	physical
pn = n	pneumonia
ps = s	psychology
pt = t	ptosis pterygium
rh = r rrh	rheumatism hemorrhoid
x (as first letter) = z	xerosis

Adapted from: Willis, M.C. (1996). Medical Terminology: The Language of Health Care. Baltimore: Williams and Wilkins.