

Objectives

- Review the components of a medical term.
- Review a list of common medical terms.

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Discuss objectives.



Introduction

- Medical terminology is the language of health care.
- Medical terminology is much more concise than normal English for describing things of a medical nature.
- By understanding terms, components, even complex words can be broken down.

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Medical terminology is the language of health care.

As an EMT, it is important that you establish a basic understanding of medical terminology so you may communicate effectively with other professionals on the health care team.

Although we adjust our communication styles for our patients, as health care professionals we should use proper medical terminology when addressing others on the health care team and when documenting patient care reports.

Medical Term Origins

- Terms often derived from Greek and Latin sources
- Common parts compose the terms
- Some memorization will be required to get a basic grasp of the language

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At first glance, many medical terms may appear difficult to:

- Read
- Understand
- Pronounce

One reason for this is because most medical terms are derived from Greek and Latin origins, with which we may not be very familiar.

But if you know the common parts that compose the term, the words can become easier to understand and interpret.

To do this it is necessary to memorize commonly encountered:

- Prefixes
- Suffixes
- Combining forms

Many medical terms get their meaning from:

- Anatomical structures
- Organs
- Systems with which they are associated

Structure of Medical Terms

- Three basic components
 - Combining form
 - Suffix
 - Prefix

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Most medical terms have three basic components:

- Prefix
- Combining form
- Suffix

The *combining form* is the subject or foundation of the word that gives the word its essential meaning.

Each combining form is composed of two parts:

- Root
- Combining vowel

The *root* is the part of the term that provides the foundation for the rest of the term.

Combining vowels are joined to the end of a root to connect the root to another root or to a suffix.

Combining vowels make the word easier to pronounce.

The most common combining vowel is *o*, followed by *i*.

A combining vowel is not used if the suffix begins with a vowel.

Some medical terms may contain more than one combining form.

For example, the term *cardiovascular* has two combining forms:

- cardi/o (heart)
 - vascul/o (vessel)
- cardi/o vascul/o -ar

Figure 5-1 Use proper medical terminology to communicate with other health care professionals.



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How to Define Medical Terms

- Terms can easily be defined by determining the meaning of their parts
- Read left to right, but define by interpreting the suffix, then the prefix, then the combining form

prefix	combining form	suffix
hyper-	glyc/o	-emia
(above or excessive)	(sugar)	(blood condition)

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In this example of hyperglycemia, the meaning is derived from the suffix -emia (meaning blood condition), then the prefix hyper- (meaning above or excessive), followed by the combining form glyc/o (meaning glucose or sugar).

So the meaning of the term *hyperglycemia* would be a blood condition that has an excessive amount of glucose (sugar) in it.

A patient presents with hypotension. Based on the prefix in the term, you should suspect the patient's blood pressure to be below normal.

You are called to the residence of a patient in respiratory distress. Dispatch advises the patient has recently had a tracheostomy. Based on this information you expect to find an artificial opening in the trachea

Dysphagia refers to difficulty swallowing.

Figure 5-2 Sometimes it will be more convenient to use an accepted medical abbreviation or symbol in your report instead of writing the entire term.

MESA FIRE DEPARTMENT EMS ENCOUNTER FORM

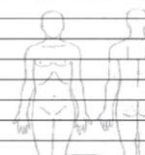
LOC U/A: <input type="checkbox"/> AWAKE <input type="checkbox"/> ALERT ORIENTED: <input type="checkbox"/> PERSON <input type="checkbox"/> PLACE <input type="checkbox"/> TIME <input type="checkbox"/> EVENTS <input type="checkbox"/> VERBAL <input type="checkbox"/> PAINFUL <input type="checkbox"/> UNRESR <input type="checkbox"/> LOSS OF CONSCIOUSNESS: <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNKNOWN	
MVC - Resp. to 2-vehicle crash - crew assigned to treat 3yo male found crying in properly positioned car seat in back seat facing forward. Pt. calmed easily by mother. No obvious injuries. Alert & oriented. Age appropriate. No DCAP-BTLS.	
ROS: <u>30</u> MPH PER HR	
SEATBELT WORN: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNKNOWN	
AIRBAG DEPLOYED: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNKNOWN	
INTRUSION: INT/ <u>No</u> EXT/ <u>No</u>	
POSITION = 0 DAMAGE = X	
↓ DETAILED PHYSICAL EXAM / SEE REVERSE	
HEAD / FACE / AIRWAY	
	
NECK	
CHEST	
ABD	
ORTHO	

Table 5-1 Common Prefixes in Medical Terms.

Prefix	Meaning	Prefix	Meaning	Prefix	Meaning
a-, an-	without	dys-	painful, difficult, or faulty	mono-	one
ab-	away from	en-, endo-	within	para-	alongside
ad-	to; toward, or near	epi-	upon	peri-	around
ante-	before	eu-	good or normal	poly-	many
anti-	against	hemi-	half	post-	after or behind
bi-	two or both	hyper-	above or excessive	pre-, pro-	before
brady-	slow	hypo-, infra-	below or deficient	quadr/i-	four
circum-	around	inter-	between	sub-	below or deficient
con-	together or with	intra-	within	super-, supra-	above or excessive
contra-	against	macro-	large	tachy-	fast
de-	from, down, or not	micro-	small	uni-	one

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Table 5-2 Common Suffixes in Medical Terms.

Suffix	Meaning	Suffix	Meaning	Suffix	Meaning
-a	condition of	-ia, -ism	condition of	-ous	pertaining to
-ac, -al, -ar, -ary	pertaining to	-iatrics, -iatry	treatment	-plasty	surgical repair or reconstruction
-acusis	hearing	-ic	pertaining to	-plegia	paralysis
-algia	pain	-itis	inflammation	-pnea	breathing
-arche	beginning	-ium	structure or tissue	-rhage, -rhagia	to burst forth
-ation	process	-lepsy	seizure	-rrhea	discharge
-cele	pouching or hernia	-logist	one who specializes in the study of	-scope	instrument for examination
-centesis	puncture for aspiration	-logy	study of	-scopy	process of examination
-dynia	pain	-lysis	breakdown or dissolution	-spasm	involuntary contraction
-eal	pertaining to	-malacia	softening	-stomy	creation of an opening
-ectomy	excision	-megaly	enlargement	-tic	pertaining to
-emesis	vomiting	-meter	instrument for measuring	-tomy	incision
-emia	blood condition	-oma	tumor	-tripsy	crushing
-gram	record	-osis	condition or increase	-y	condition or process of
-graphy	process of recording	-otomy	cutting or separation		

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Table 5-3 Common Combining Forms in Medical Terms. Related to the Cardiovascular System.

Combining Form	Meaning
angi/o	vessel
aort/o	aorta
arteri/o	artery
ather/o	fatty paste
atri/o	atrium
cardi/o	heart
phleb/o	vein
sphygm/o	pulse
vas/o, vascul/o	vessel
ven/o	vein
ventricul/o	ventricle



Table 5-3 (continued) Related to the Endocrine and Immune Systems.

Combining Form	Meaning
aden/o	gland
adren/o, adrenal/o	adrenal gland
crin/o	to secrete
gluc/o, glyc/o	sugar
hormon/o	hormone
immune/o	safe
ket/o, keton/o	ketone bodies
pancreat/o	pancreas
thalm/o	thalamus
thym/o	thymus gland or mind
thyr/o, thyroid/o	thyroid gland

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Table 5-3 (continued) Related to the Eyes and Ears.

Combining Form	Meaning
acous/o, audi/o	hearing
aque/o	water
aur/i, ot/o	ear
blephar/o	eyelid
cerumen/o	wax
conjunctiv/o	conjunctiva
corne/o	cornea
kerat/o	cornea
myring/o, tympan/o	eardrum
ocul/o	eye
retin/o	retina
tympan/o	eardrum



Table 5-3 (continued) Related to the Gastrointestinal System.

Combining Form	Meaning
abdomin/o	abdomen
an/o	anus
appendic/o	appendix
bil/i, chol/e	bile
bucc/o	cheek
celi/o	abdomen
col/o, colon/o	colon
duoden/o	duodenum
enter/o	small intestine
esophag/o	esophagus
gastr/o	stomach

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Table 5-3 (continued) Related to the Gastrointestinal System.

hepat/o, hepatic/o	liver
herni/o	hernia
lapar/o	abdomen
or/o	mouth
peritone/o	peritoneum
phag/o	eat or swallow
proct/o	anus and rectum
rect/o	rectum
splen/o	spleen
stomat/o	mouth

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Table 5-3 (continued) Related to the Integumentary System.

Combining Form	Meaning
adip/o	fat
cutane/o	skin
derm/o, dermat/o	skin
hist/o, histi/o	tissue
lip/o	fat
onych/o	nail
seb/o	oil
steat/o	fat
trich/o	hair

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Table 5-3 (continued) Related to the Musculoskeletal System.

Combining Form	Meaning
ankyl/o	crooked or stiff
arthr/o, articulo	joint
brachi/o	arm
cephal/o	head
cervic/o	neck
chondr/o	cartilage
cost/o	rib
crani/o	skull
femor/o	femur
kyph/o	humped back
lord/o	bent
lumb/o	lower back
my/o, muscul/o, myos/o	muscle



Table 5-3 (continued) Related to the Musculoskeletal System.

oste/o	bone
patell/o	patella
pector/o	chest
pelv/i	pelvis
pod/o	foot
radi/o	radius or radiation
stern/o	sternum
steth/o	chest
ten/o, tend/o, tendin/o	tendon
thorac/o	chest
uln/o	ulna
vertebr/o	vertebra



Table 5-3 (continued) Related to Neurology/Psychology.

Combining Form	Meaning
cerebell/o	cerebellum
cerebr/o	cerebrum
encephal/o	entire brain
esthesi/o	sensation
mening/o, meningi/o	meninges
myel/o	bone marrow or spinal cord
neur/o	nerve
phas/o	speech
phob/o	exaggerated fear or sensitivity
phon/o	voice or sound
phren/o	diaphragm or mind
psych/o	mind
schiz/o	split or division



Table 5-3 (continued) Related to the Reproductive System.

Combining Form	Meaning
andr/o	male
balan/o	glans penis
colp/o	vagina
gynec/o	woman
hyster/o	uterus
mamm/o, mast/o	breast
men/o	menstruation
metr/o, uter/o	uterus
oophor/o, ovari/o	ovary
orch/o, orchid/o, test/o	testis (testicle)
vagin/o	vagina



Table 5-3 (continued) Related to the Respiratory System.

Combining Form	Meaning
aer/o	air or lung
alveol/o	alveoli (air sac)
bronch/o, bronchi/o	bronchus (airway)
bronchiol/o	bronchiole (little airway)
capn/o, carb/o	carbon dioxide
laryng/o	larynx
lob/o	lobe
nas/o	nose
pharyng/o	pharynx
pleur/o	pleura
pne(a)/o	breathing
pneum/o, pneumon/o	air or lung
pulmon/o	lung
rhin/o	nose
sinus/o	hollow
trache/o	trachea
vas/o, vascul/o	vessel



Table 5-3 (continued) Related to the Urinary System.

Combining Form	Meaning
cyst/o	bladder or sac
glomerul/o	glomerulus (small ball)
lith/o	stone
nephr/o, ren/o	kidney
ur/o, urin/o	urine
ureter/o	ureter
urethr/o	urethra
vesic/o	bladder or sac



Table 5-3 (continued) Other Common Combining Forms.

Combining Form	Meaning
carcin/o	cancer
chrom/o, chromat/o	color
chyl/o	juice
cyan/o	blue
cyt/o	cell
diaphor/o	profuse sweating
dips/o	thirst
erythr/o	red
hem/o, hemat/o	blood
hydr/o	water

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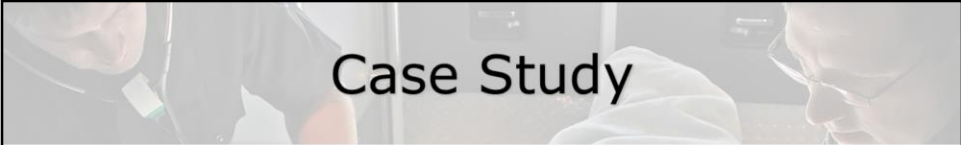
Table 5-3 (continued) Other Common Combining Forms.

leuk/o	white
lingu/o	tongue
lymph/o	lymph
melan/o	black
necr/o	death
ox/o	oxygen
path/o	disease
purpur/o	purple
somat/o	body
thromb/o	clot
tox/o, toxic/o	toxic
xanth/o	yellow

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Case Study

- Which of the following is a root word?
 - A. anti-
 - B. hepat-
 - C. -itis
 - D. -emia

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Hepat-



Case Study

- Which of the following is the most common type of combining form?
 - A. “a”
 - B. “e”
 - C. “i”
 - D. “o”

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“o”



Case Study

- The prefix “tachy-” means:
 - A. above
 - B. outside
 - C. fast
 - D. higher

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Fast



Case Study

- If a patient is complaining of dyspnea, he has what condition?
 - A. chest pain
 - B. stomach ache
 - C. nausea
 - D. trouble breathing

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Trouble breathing.



Case Study

- Which of the following is a root word?
 - A. tachy-
 - B. nephr-
 - C. -ology
 - D. dys-

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Neph-



Case Study

- What is the common prefix meaning “alongside”?
 - A. peri-
 - B. poly-
 - C. para-
 - D. post-

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Para-



Case Study

- The suffix “-logy” refers to:
 - A. study of
 - B. occurring after
 - C. within
 - D. pertaining to

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Study of.



Case Study

- The combining form “or/o” means:
 - A. to speak
 - B. mouth
 - C. anus
 - D. ear

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Ear



Case Study

- The term for blood in the urine would be:
 - A. diarrhea
 - B. rhinorrhea
 - C. hematuria
 - D. hematemesis

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Hematuria

Case Study – Matching

- | | |
|-----------------------|-----------------------------------|
| _____ 1. Arthritis | b. absence of breathing |
| _____ 2. Myodynia | c. pain in a muscle |
| _____ 3. Hepatomegaly | d. softening of the bone |
| _____ 4. Apnea | e. discharge from the ear |
| _____ 5. Hematuria | f. surgical removal of the uterus |
| _____ 6. Dysuria | g. enlargement of the liver |
| _____ 7. Hysterectomy | h. inflammation of a joint |
| _____ 8. Osteomalacia | i. loss of speech |
| _____ 9. Aphasia | j. blood in the urine |
| _____ 10. Otorrhea | |
- a. difficult or painful urination

Answers as appropriate.



Case Study

Interpret this case using normal English.

History and Assessment:

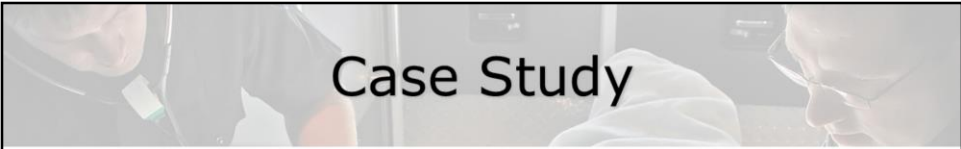
A 67 y/o male c/o angina and dyspnea x 2 hours. The pain is severe (8 out of 10), located retrosternal, with radiation to the left humerus and mandible. The pain awoke the patient from his sleep. Discomfort does not change with movement or respirations. The pt. has a Hx of CVD, CHF, HTN, and MI. Medications include ASA, insulin, Lasix, and lisinopril. He is allergic to PCN.

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Allow student(s) to interpret what this medical report is.



Case Study

Physical Exam:

Pupils: PEARL, membranes hydrated

Airway: Patent, no abnormal sounds

Breathing: Adequate with good Vt

Circulation: Peripheral pulses intact

Thorax: = BS bilaterally, excursion normal,
(+) dyspnea, (+) angina

Abdomen: (-) N/V, (-) distention, (-) incontinence,
(-) hematuria, (-) diarrhea

Extremities: PMS = times 4, skin W&D, patient MAE well

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Allow student(s) to interpret what this medical report is.



Case Study

Treatment:

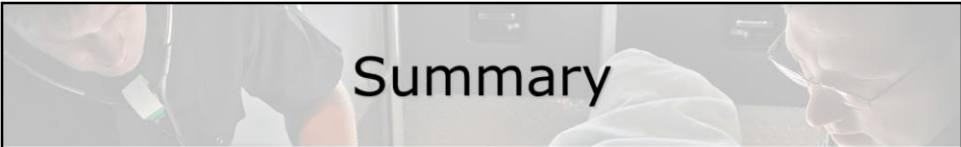
O₂ via NRB, ASA 325 mg p.o., nitro 0.3 mg SL x3, IV initiated, patient placed in POC. Pain diminished from 8 to 2 on scale. Respirations now eupneic, and patient states they “feel better.” Hospital notified en route and bedside report given upon arrival.

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Allow student(s) to interpret what this medical report is.



Summary

- The proper use of medical terminology will help ensure clarity in the sharing of information regarding the patient.
- The EMT should keep abreast of medical terms and abbreviations as they pertain to the practice.
- The proper use of medical terminology is an expectation of the EMT.

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Discuss as needed.