

Basic Concepts of Medical Terminology

“Medical terminology is the professional language of those who are directly or indirectly engaged in the art of healing.” (Frenay and Mahoney, 1998) Most medical terms have Greek or Latin origins, though some are derived from modern languages, particularly German, French, and English. In general, terms dealing with diagnosis and surgery have Greek origins, whereas anatomical terms have Latin origins. An understanding of the structure of medical terms, and an ability to break down a medical term into its parts helps you get the most out of using a medical dictionary, and makes dealing with medical terminology less challenging than it first appears.

Medical terms are formed from word *roots*, *prefixes*, *suffixes*, and *combining vowels/forms*, defined below:

Root – the foundation of the word, it can be combined with a prefix or suffix; nearly all medical terms have one or more roots; usually Greek or Latin

Prefix – placed before the root to modify its meaning

Suffix – placed after the root to modify and give essential meaning to the root; forms a noun, verb, or adjective

Combining form – has no meaning of its own; root with a **combining vowel** attached (e.g. *lip/o-*); joins a root to another root or to a suffix; makes the word easier to pronounce; *o* is the most common combining vowel, followed by “a”

In “decoding” medical terms, it is best to look first at the meaning of the suffix, then at the meaning of the root or root and prefix.

Example: **hyperlipoproteinemia**
hyper- (prefix) = excessive
lip (root) = fat
o (vowel used to create a combining form, lipo-)
protein (root) = protein
-emia (suffix) = blood condition

Hyperlipoproteinemia is a blood condition, characterized by an excessive amount of fat and protein.

Example: **pericarditis**
peri- (prefix) = around
cardi (root) = heart
-itis (suffix) = inflammation

Pericarditis literally means “inflammation around the heart” but the dictionary states that this terms means inflammation of the pericardium (-ium is a suffix meaning tissue), the sac that encloses the heart.

Example: gastroenterology
Gastr- (root) = stomach

O (combining vowel)
 -enter- (root) = intestine
 O (combining vowel)
 -logy (suffix) = study of

Gastroenterology means the study of the stomach and the intestines.

An example of the power of a suffix.

In the medical specialty of **dermatology**, a **dermatologist** will often diagnose a **dermatitis**.

Complete word	Combining form	Suffix	Meaning of the suffix	Meaning of the word
Dermatitis	Dermat-	-itis	Inflammation	Inflammation of the skin
Dermatologist	Dermat/o-	-logist	One who studies	One who studies the skin
Dermatology	Dermat/o-	-logy	Study of	Study of the skin

An example of the power of a prefix.

Complete word	Prefix	Meaning of the prefix	Meaning of the word
Epigastric	Epi-	Above	Pertaining to above the stomach
Hypogastric	Hypo-	Below	Pertaining to below the stomach
Endogastric	Endo-	Inside	Pertaining to inside the stomach

Various medical terms refer to divisions of the body, body position and direction, planes of the body, and body cavities. Examples of these are: *epigastric region* and *lower right quadrant* of the abdomen; *sacral region* of the back; *superficial* position; *efferent* direction; *horizontal* plane; and *frontal sinus*. It may be helpful to familiarize yourself with some of these terms.

Medical Terminology: Prefixes

<i>Prefix</i>	<i>Definition</i>	<i>Example</i>
a-, an-	without; lacking	aphasia - without speech anemia - lack of blood
ab-	away from	abductor - leading away from
ad-	toward; near	adductor- leading toward adrenal - near the kidney
An-	without or absence of	
Ana-	up; again; backward	
Ante-	before	
anti-/contra-	against	anticoagulant - prevent blood clotting contraception - prevent conception/impregnation
Apo-	upon	
Bi/bin-	two	
Brady-	slow	
Cata-	down	
Con-	together	
Contra-	against	
De-	from; down from; lack of	
Dia-	thorough; complete	
Dis-	to undo; free from	
Dys-	difficult; labored; painful; abnormal	
ect-, ecto-, ex-, exo-	outer; outside	ectoderm - outer skin
end-, endo-, ent	within; inner	endocranial - within the cranium endodontium - dental pulp
Epi-	on; upon; over	
Eso-	inward	
Eu-	normal; good	
Extra-	outside of; beyond	
Hemi-	half	
Hyper-	above, beyond, excessive	hyperglycemia - high glucose hypertension - high blood pressure
hyp-, hypo-	under, deficient	hypothermia - low body temperature hypothyroidism - thyroid deficiency
In-	In; into; not	
infra-	beneath; below	infraorbital - beneath the eye
inter-	between	intercostal - between the rib
intra-	within	intravenous - within a vein
Mal-	bad	
Meso-	middle	
Meta-	after; beyond; change	
Micro-	small	
Multi-	many	
neo-	new	neonate - newly born
Nulli-	none	
Pan-	all; total	

Para-	beside; beyond; around	
Per-	through	
peri-	around	periodontal - around the tooth periosteum - around bone
poly-	many, excessive	polycystic - many cysts polydipsia - excessive thirst
Ost-	after	
Pre-	before; in front of	
Pro-	before	
Re-	back	
Retro-	back; behind	
Semi-	half	
sub-	under	subcutaneous - under the skin sublingual - beneath the tongue
Super-	over; above	
Supra-	above	
Sym-, syn-	together; joined	
Tachy-	fast; rapid	
Tetra-	four	
Trans-	through; across; beyond	
Tri-	three	
Ultra-	beyond; excess	
Uni-	one	

Medical Terminology: Suffixes

Suffix	Definition	Example
-agra	excessive pain	
-algia, -dynia	pain	neuralgia - pain in nerves
-apheresis	removal	
-ase	enzyme	
-asthenia	weakness	
-atresia	absence of a normal body opening; occlusion; closure	
-capnia	carbon dioxide	
-cele	hernia; protrusion	
-centesis	surgical puncture to remove fluid	amniocentesis - amniotic fluid
-cidal	killing	
-clasia, -clasis, -clast	break	
-lysis	irrigating; washing	
-coccus (pl. cocci)	berryshaped (a form of bacterium)	
-crine	separate; secrete	
-crit	to separate	
-cyte	cell	
-desis	surgical fixation; fusion	
-drome	run; running	
-ectasis	stretching out; dilatation; expansion	
-ectomy	cut out, excision	appendectomy - removal of the appendix
-ectopia	displacement	
-emesis	vomiting	
-emia	blood condition	anemia - low/lack of red blood cells leukemia - malignant blood disease
-esis -ity -iasis -ia -osis -y	state or condition	anesthesia - loss of sensation psoriasis - skin condition scoliosis - spine curvature
-en	substance or agent that produces or causes	
-genesis	origin; cause	
-genic	producing; originating; causing	
-gram, -graphy	recording, written	mammogram - x-ray of breast cardiography - record of physical or functional aspect of the heart
-ia	condition of diseased or abnormal state	
-iatry	physician; treatment	
-ician	one who	
-ictal	seizure; attack	
-ism	state of	
-ites, -itis	inflammation	carditis - inflammation of the heart
-lepsy	seizure	
-lysis	loosening; dissolution; separating	
-lytic	destroy; reduce	

-malacia	softening	
-mania	madness; insane desire	
-megaly	enlargement	
-meter	instrument used to measure	
-metry	measurement	
-morph	form; shape	
-odia	smell	
-odynia	pain	
-oid	resembling	
-ologist	one who studies and practices (specialist)	
-ology	study of	
-oma	tumor	lymphoma - lymph tissue melanoma - tumor of pigment tissue
opia	vision (condition)	
opsy	to view	
oorhagia	rapid flow of blood	
orrhaphy	suturing; repairing	
orrhea	flow; excessive discharge	
orrhexis	rupture	
osis	abnormal condition (means increased when used with blood cell word roots)	
ostomy	creation of an artificial opening	
otomy	cut into or incision	
oxia	oxygen	
paresis	slight paralysis	
pathy	disease	
-penia	deficiency, lack of	glycopenia - sugar deficiency in tissues
-pepsia	digestion	
-pexy	surgical fixation; suspension	
-phagia, phagy	eating, devouring	tachyphagia - eating fast
-philia, -phily	love	
-phobia	abnormal fear of or aversion to specific objects or things	
-phonia	sound or voice	
-phoria	feeling	
-physis	growth	
-plasia	formation; development; a growth	
-plasm	growth; substance; formation	
-plasty	surgical shaping	genioplasty - chin rhinoplasty - nose
-pnea	breathing	apnea - cessation of breathing dyspnea - labored breathing
-poiesis	formation	
-porosis	passage	
-prandial	meal	
-praxia	in front of; before	
-ptosis	dropping; sagging; prolapse	
-ptysis	spitting	
-rrhaphy	suture	gastrorrhaphy - stomach
-rrhea	flow or discharge	rhinorrhea - nasal

-salpinx	fallopian tube	
-sarcoma	malignant tumor	
-schisis	split; fissure	
-sclerosis	hardening	
-scope	instrument used for visual examination	
-scopy, -scopic	to examine	cystoscopy - bladder cytoscoy - cells
-sepsis	infection	
-sis	state of	
spasm	sudden involuntary muscle contraction	
-stasis	control; stop	
-stalsis	contraction	
-stenosis	constriction; narrowing	
-stomy	surgical opening	colostomy - into the colon tracheostomy - into the trachea
-thorax	chest	
-tocia	birth; labor	
-tome	instrument used to cut	
-tomy	cutting; incision	phlebotomy - into the vein
-tripsy	surgical crushing	
-trophy	nourishment	
-ule	little	
-uria	urine; urination	

Medical Terminology: Root Terms

<i>Root</i>	<i>Definition</i>	<i>Example</i>
aden-	[Gr.] gland	adenoma
blephar-	[Gr.] eyelid	blepharoplasty
cardi-	[Gr.] heart	cardiography
derm(at)-	[Gr.] skin	dermatitis
gastr-	[Gr.] stomach	gastrostomy
grav-	[L.] heavy	multigravida
lingu-	[L.] tongue	sublingual
phob-	[Gr.] fear	agoraphobia
spirat-	[L.] breathe	inspiratory
thorac-	[Gr.] chest	thoracoplasty
abdomin	abdomen	
acanth	thorny, spiny	
acetabul	acetabulum (hip socket)	
acou	hearing	
acr	extremities; height	
actin	ray; radius	
adenoid	adenoids	
aden	gland	
adrenal	adrenal gland	
adren	adrenal gland	
aer	air; gas	
albumin	albumin	
algesi	pain	
alveol	alveolus	
ambly	dull; dim	
amni	amnion	
amnion	amnion	
amyl	starch	
andr	male	
angi	vessel	
anis	unequal; dissimilar	
ankyl	crooked; stiff; bent	
antr	antrum	
an	anus	
aort	aorta	
aponeur	aponeurosis	
appendic	appendix	

arche	first; beginning
arteri	artery
arteriol	arteriole (small artery)
arthr	joint
articul	joint
atel	imperfect; incomplete
ather	yellowish; fatty plaque
atri	atrium
aur	ear
aut	self
axill	armpit
azot	urea; nitrogen
bacteri	bacteria
balan	glans penis
bi	life
bil	bile
blast	developing cell
blephar	eyelid
brachi	arm
bronch	bronchus
bronchiol	bronchiole
bucc	cheek
burs	bursa (cavity)
calc	calcium
cancer	cancer
carcin	cancer
cardi	heart
carp	carpals (wrist bones)
caud	tail; toward the lower part of the body
cec	cecum
celi	abdomen (abdominal cavity)
cephal	head
cerebell	cerebellum
cerebr	cerebrum, brain
cerumin	cerumen (earwax)
cervic	cervix
cheil	lip
chir	hand
cholangi	bile duct
chol	gall; bile

choledoch	common bile duct
chondr	cartilage
chori	chorion
chrom	color
clavic	clavicle (collarbone)
clavicul	clavicle (collarbone)
col	colon
colp	vagina
coni	dust
conjunctiv	conjunctiva
core	pupil
corne	cornea
coron	heart
cortic	cortex (outer layer of body organ)
cor	pupil
cost	rib
crani	cranium (skull)
cry	cold
crypt	hidden
culd	culdesac
cutane	skin
cyan	blue
cyes	pregnancy
cyst	bladder; sac
cyt	cell
dacry	tear, tear duct
dactyl	fingers or toes
dent	tooth
dermat	skin
derm	skin
dextr	right
diaphor	sweat
diaphragmat	diaphragm
dipl	two; double
dips	thirst
disk	intervertebral disk
diverticul	diverticulum
dors	back (of the body)
duoden	duodenum
dur	hard; dura mater

dynam	power or strength
ech	sound
ectop	located away from usual place
electr	electricity, electrical activity
embry	embryo; to be full
emmetr	a normal measues
encephal	brain
endocrin	endocrine
enter	intestines
epididym	epididymis
epiglott	epiglottis
episi	vulva
epitheli	epithelium
erythr	red
esophag	esophagus
esthesi	sensation, sensitivity, feeling
eti	cause (of disease)
faci	face
femor	femur (upper leg bone)
fet	fetus; unborn child
fibr	fibrous tissue, fibers
fibul	fibula (lower leg)
gangli	ganglion
ganglion	ganglion
gastr	stomach
ger	old age; aged
geront	old age; aged
gingiv	gum
glomerul	glomerulus
gloss	tongue
gluc	sweetness; sugar
glyc	sugar
glycos	sugar
gnath	jaw
gnos	knowledge
gon	seed
gravid	pregnancy
gynec	woman
gyn	woman
hem	blood

hemat	blood
hepat	liver
herni	hernia
heter	other
hidr	sweat
hist	tissue
hom	same
home	sameness; unchanging
humer	humerus (upper arm bone)
hydr	water
hymen	hymen
hypn	sleep
hyster	uterus
iatr	medicine; physician
ichthy	fish
ile	ileum
ili	ilium
immun	immune
irid	iris
iri	iris
ischi	ischium
isch	deficiency; blockage
is	equal; same
jejun	jejunum
kal	potassium
kary	nucleus
kerat	cornea
kerat	horny tissue; hard
kin	movement
kinesi	movement; motion
kyph	hump
labi	lips
labyrinth	labyrinth
lacrim	tear duct, tear
lact	milk
lamin	lamina (thin; flat plate or layer)
lapar	abdomen
laryng	larynx
later	side
lei	smooth

leuk	white
lingu	tongue
lip	fat
lith	stone; calculus
lob	lobe
lord	bent forward
lymph	lymph
macr	abnormal largeness
mamm	breast
mandibul	mandible (lower jawbone)
mast	breast
mastoid	mastoid
maxill	maxilla (upper jawbone)
meat	meatus (opening)
melan	black
mening	meninges
menisc	meniscus (crescent)
men	menstruation
ment	mind
metr	uterus
mon	one
morph	form; shape
muc	mucus
myc	fungus
myel	bone marrow; spinal cord
myelon	bone marrow
myos	muscle
myring	eardrum
my	muscle
narc	stupor
nas	nose
nat	birth
necr	death (cells; body)
nephr	kidney
neur	nerve
noct	night
nyct	night
nyctal	night
ocul	eye
olig	scanty; few

omphal	umbilicu; navel
onc	tumor
onych	nail
oo	egg; ovum
oophor	ovary
ophthalm	eye
opt	vision
orchid	testis; testicle
orchi	testis; testicle
orch	testis; testicle
organ	organ
or	mouth
orth	straight
oste	bone
ot	ear
ov	egg
ox	oxygen
pachy	thick
palat	palate
pancreat	pancreas
papill	nipple
parathyroid	parathyroid gland
par	bear; give birth to; labor
patell	patella (kneecap)
path	disease
part	bear; give birth to; labor
pector	chest
ped	child; foot
pelv	pelvis; pelvic bone
perine	perineum
peritone	peritoneum
petr	stone
phac	lens of the eye
phag	eat; swallow
phak	lens of the eye
phalang	pharynx
phas	speech
phleb	vein
phot	light
phren	mind

physi	nature
plasm	plasma
pleur	pleura
pneumat	lung; air
pneum	lung; air
pneumon	lung; air
pod	foot
poli	gray matter
poikil	varied; irregular
polyp	polyp; small growth
poster	back (of body)
prim	first
proct	rectum
prostat	prostate gland
pseud	fake; false
psych	mind
pub	pubis
puerper	childbirth
pulmon	lung
pupill	pupil
pyel	renal pelvis
pylor	pylorus (pyloric sphincter)
py	pus
pyr	fever; heat
quadr	four
rachi	vertebra; spinal or vertebral column
radic	nerve root
radicul	nerve root
radi	radius (lower arm bone)
rect	rectum
ren	kidney
retin	retina
rhabd	rodshaped, striated
rhin	nose
rhytid	wrinkles
rhiz	nerve root
salping	fallopian (uterine) tube
sarc	flesh; connective tissue
scapul	scapula (shoulder bone)
scler	sclera

scoli	crooked, curved
seb	sebum (oil)
sept	septum
sial	saliva
sigmoid	sigmoid
sinus	sinus
somat	body
somn	sleep
son	sound
spermat	spermatozoan; sperm
sperm	spermatozoan; sperm
sphygm	pulse
spir	breathe; breathing
splen	spleen
spondyl	vertebra; spinal or vertebral column
staped	stapes (middle ear bone)
staphyl	grapelike clusters
stern	sternum (breastbone)
steth	chest
stomat	mouth
strept	twisted chains
synovi	synovia; synovial membrane
system	system
tars	tarsals (ankle bones)
tars	edge of eyelid; tarsal (instep of foot)
tendin	tendon
tend	tendon
ten	tendon
test	testis; testicle
therm	heat
thorac	thorax (chest)
thromb	clot
thym	thymus gland
thyroid	thyroid gland
thyr	thyroid gland
tibi	tibia (lower leg bone)
tom	cut; section
ton	tension, pressure
tonsill	tonsils
top	place

toxic	poison
trachel	neck; necklike
trache	trachea
trich	hair
tympan	eardrum; middle ear
uln	ulna (lower arm bone)
ungu	nail
ureter	ureter
urethr	urethra
urin	urine; urinary tract
ur	urine; urinary tract
uter	uterus
uvul	uvula
vagin	vagina
valv	valve
valvul	valve
vas	vessel; duct
ven	vein
ventricul	ventricle
vertebr	vertebra; spinal or vertebral column
vesic	bladder; sac
vesicul	seminal vesicles
viscer	internal organs
vulv	vulva
xanth	yellow
xer	dry