Tips and strategies for learning medical terminology ARTICLE

If you come across a word like *cryoglobulinemia* and think, *It's Greek to me*, there's good reason for that. It is Greek. And Latin. Most medical terms — over 90% — originate in Greek and Latin. But don't let that intimidate you when it comes to medical terminology.

More than 60% of our everyday words are borrowed from Greek and Latin, which means you have a familiarity with medical terminology that you might not realize. It's not a big jump, for example, to go from *acrobat* to *acromania* or *acroanesthesia*.

Among our tips and strategies for learning medical terminology, we're going to show you how to put your familiarity to work for you. But first, let's answer a few questions so we can establish who should study medical terminology and why.

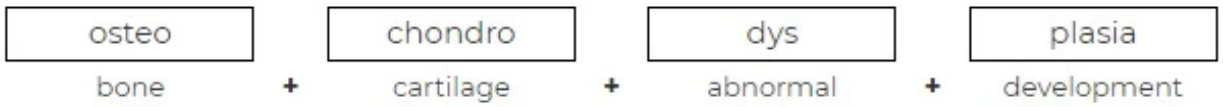
- **What is medical terminology?**
  Medical terminology is the language of healthcare. It's the means for healthcare professionals to confer on the intricacies of the human body, both in states of health and states of injury or disease. As such, medical terminology comprises the lexicon of labels for all known anatomical features, physiological processes, and medical interventions.
- **Why is it important to understand medical terminology?**
  Understanding medical terminology opens a door to understanding both medicine and the healthcare community. The more you need to understand either of these, the more important your understanding of medical terminology becomes.
- **Who should learn medical terminology?**
  If you're seeking a career with daily responsibilities that will require you to know an anatomical feature from a physiological process from a medical intervention, then you'll need to gain fluency in medical language to perform your job.
  Equally important, you'll need to understand medical terminology to succeed in your career training program, as well as your prospective workplace. This is true if you're choosing a career on the clinical side of healthcare as a medical sonographer, radiation therapist, or magnetic resonance imaging technologist. It's also true if you're pursuing a career on the business side of healthcare as a medical scribe, medical transcriptionist, medical biller, or medical coder.
- **Is medical terminology hard to learn?**
  A word like *osteochondrodysplasia* is an eyeful — and there are thousands of terms like it — but don't let appearances fool you. Learning medical terminology isn't as difficult as you'd think. Not if you approach it right, with the right strategies and right resources.

Build your medical vocabulary brick by brick

When it comes to medical terminology, think LEGO. A LEGO brick is just a LEGO brick, but when you snap these pieces of plastic together, you get something upscale.

Similarly, word parts — like mini bricks — make up most medical terms. Once you start to learn the word parts, you no longer see an unknowable 21-letter word. When, for example, you look at *osteochondrodysplasia*, you see:

HELP



So osteochondrodysplasia becomes recognizable. You might not know the full extent of the definition, but you piece together that the term refers to a developmental abnormality that affects bone and cartilage.

And just as a LEGO brick can be used in different constructions, you'll see a same word part in numerous medical terms. In fact, now that you learned four word parts, you have insight on an exponential list of medical terms.

We'll look at more examples of word parts and show you how familiarity goes a long way in building your medical terminology vocabulary, but first let's look at the different types of word parts.

3 component types

The construction of most medical terms follows the common structure of a prefix, medical root, and suffix.

- **Medical Prefixes:** When included, the prefix appears at the beginning of a medical term and usually indicates location, direction, time, quality, or quantity.
- **Medical Suffixes:** The suffix is tacked onto the end of a term and typically indicates a procedure, function, test, condition, or pathology. The suffix may also identify if the term is a noun, adjective, or verb.
- **Medical Root Words:** The root word is the base part of the medical term and conveys its primary meaning, which is often a body part or body system. Most medical terms contain one or more root words.

Deconstructing medical terms to their components

Mentally dividing a medical term into its word parts will help you to figure out the meaning of the unfamiliar term. But before you can deconstruct medical terms, you need to know a few things about how they're constructed.

A medical term can consist of almost any combination of word parts:

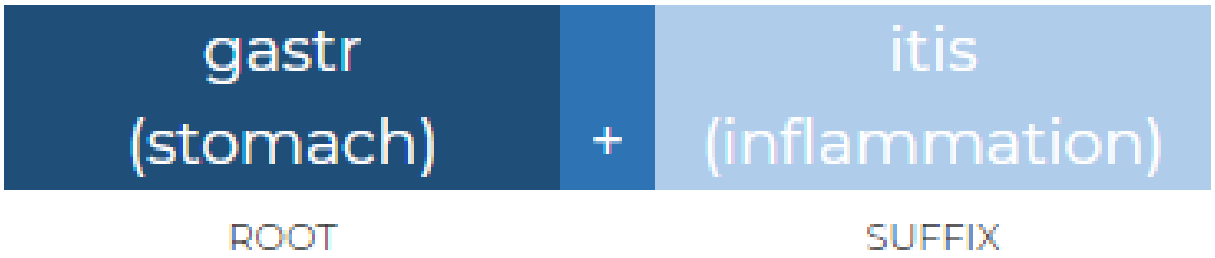
- Prefix, root word, suffix
- Root word, suffix
- Root word, root word, suffix
- Root word, root word, root word
- Prefix, suffix

Combining vowel

Medical terms get awkward to pronounce without a device for linking word parts, and so the combining vowel system was developed.

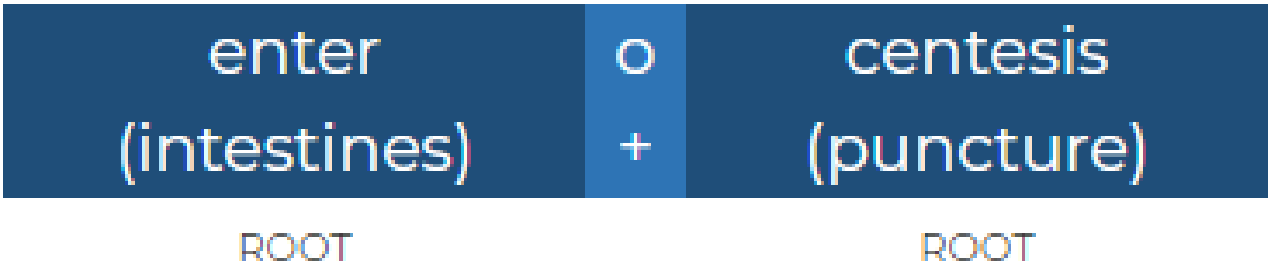
By way of example, *gastr* is the root word for stomach. When linked with the suffix -logy, meaning study or medical field, an *o* is added, forming the word gastrology.

But if the word part following *gastr* begins with a vowel, then the combining vowel is unnecessary, as seen in the example term gastritis, which means inflammation of the stomach lining.



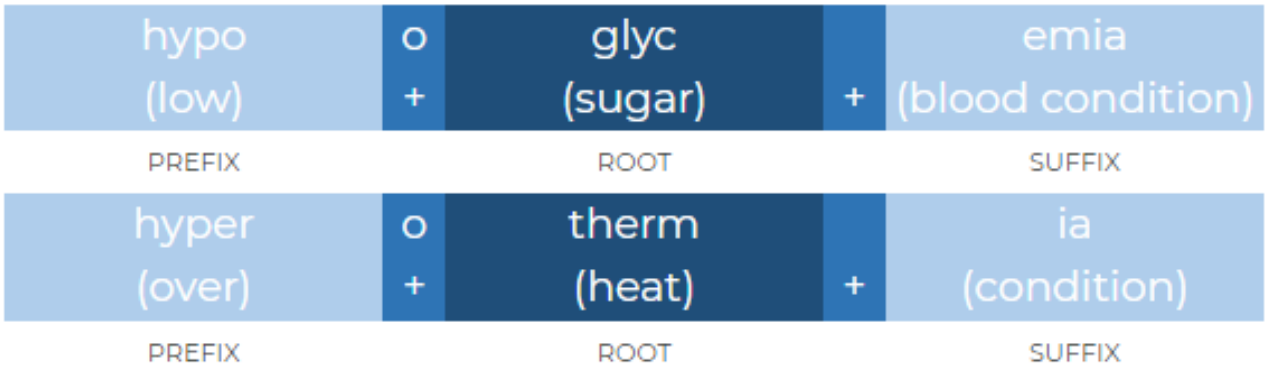
In the medical term deconstructed below, we see an example of two combining vowel practices — an *o* linking root words, and the omission of the combining *o* when the suffix begins with a vowel.

But what about when a root word ends in a vowel? The combining *o* is again omitted, as seen in the medical terminology example enterocentesis, which refers to a surgical puncture of the intestines. Enterocentesis also



Lastly, if you're wondering why we didn't break down a medical term with a prefix to illustrate how the prefix links to a root word, it's because the combining vowel only applies to root words and suffixes.

Whether a prefix ends in a vowel or a consonant is of no consequence to the formation of the medical term, as you can see in these two examples.



While you're probably familiar with the words hypoglycemia (low blood sugar) and hyperthermia (elevated body temperature), you can now see where their definitions originate.

How to learn medical terminology

Understanding the structure of medical terms allows you to see the word parts and leverage an ever-increasing familiarity with them. This is an expedient way to get a handle on medical language.

Consider the word *hemorrhage*, for instance. You know the meaning of the term, but you probably never noticed the word parts. Can you see the structure now? If not, look for an *o*. Not all medical terms have a combining *o*, but when they do, it's an obvious demarcation of structure.

The *o* in hemorrhage divides the term in two: hem + o + rrhage. You may recognize *hem* or guess that it means blood, and you'd be correct. *-rrhage* is likely new to you. It means *burst*, as in a dam breaking, and conveys excessive bleeding or fluid loss resulting from a damaged blood vessel.

Making a note of the structure in this one term gives you a head start on words like rhinorrhage, splenorrhage, otorrhage, hepatorrage. And once you learn the root words in these four terms — nose, spleen, ear, and liver respectively — you're able to expand your medical vocabulary in four directions.

- Learn from the words you know. If, for example, you know that a tonsillectomy is the surgical removal of the tonsils, then you know what the suffix *-ectomy* means. Make a flashcard.
- When you learn a new medical term, make flashcards of its word parts.
- Quiz yourself often.

Organize your study of medical root words by body system

When learning new information, context is like a corkboard in your brain, giving the information a place to stick. For this reason, you'll find lessons structured categorically when you take anatomy and medical terminology courses. Understanding and retaining information is easier with a categorical approach.

While reviewing a sampling of root words below, remember: As with a prefix and suffix, a root word is a part of the medical term and is not a word in itself. A suffix, with few exceptions, will be added to the root word to complete it.

Medical root words: Digestive system

ROOT WORD	MEANING
append	appendix
chol, chole	bile or gallbladder
col	colon
cyst	bladder
enter	small intestines
esophag	esophagus
gastr	stomach
hepat	liver
inter	intestine (usually small)

Medical root words: Cardiovascular system

ROOT WORD	MEANING
angi, vas	blood vessels
aort	aorta
arteri	arteries
capill, capilli	capillaries
card, cardi	heart
hem, hemat, sangu	blood
ven, phleb	veins

Medical root words: Respiratory system

ROOT WORD	MEANING
bronch, laryng	windpipe
nas, rhin	nose
pharyng	throat
pleur	ribs, side

pneumon, pulmon	lung
spirat	breathe
thorac	chest

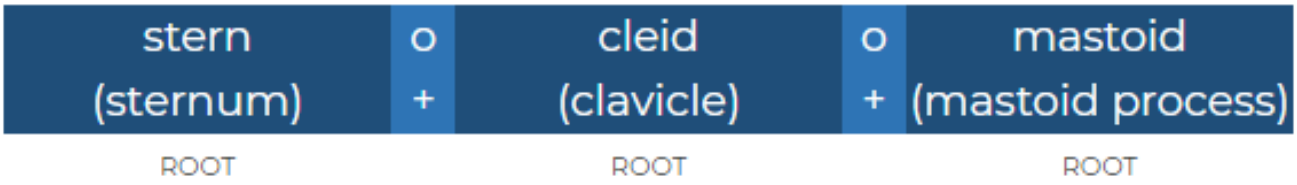
Medical root words: Skin and musculoskeletal system

ROOT WORD	MEANING
arthr, articul	joint
brachi	arm
carp	wrist
chondr	cartilage
cost	rib
crani	skull
cut, derm, dermato	skin
fasci	band
myo	muscles

pod, ped	foot
spondyl	vertebra

Earlier we told you that a medical term could consist of almost any combination of word parts — including root words only. This is a rare occurrence and, as we'll show you, only technically true.

Sternocleidomastoid. In this example, three root words are combined to form sternocleidomastoid, which refers to a muscle on each side of your neck that starts at the top of the sternum and the clavicle, then reaches up to insert behind your ear on the mastoid process of the temporal bone. It's an unusual medical term, in that it doesn't have a suffix. As you'll soon see, though, -oid is a suffix meaning *to resemble* or *similar to*. Because it's built into the root word *mastoid*, these three root words together are complete.



Of course, root words can represent more than body parts and body systems.

Medical root words: Colors

ROOT WORD	MEANING
chlor	green
cyan	blue
erythr	red

melan	black
poli	gray

Medical root words: Tests and procedures

ROOT WORD	MEANING
cente	puncture
percuss	examine by striking
scope	look
sect, tom	cut
tact	touch

Common prefixes

Before peeking below, test your thought process. You're familiar with the word *dehydrate* and with the word *hydrate*, so what do you think the de- prefix means?

Remember to analyze new terms. Break down the word parts, think it through, and keep adding to your stack of medical terminology flashcards.

Medical prefixes: Position, location, direction

PREFIX	MEANING
ab-	away from

ante-	before, forward
anter-, anteri-	front, forward
ap-, apo-	away from, detached
centre-	center
circum-, peri-	around
con-	together
dia-	through, apart
dis-	apart, away from
e-	out from
ec-, ecto-, ex-, extra-	out of, outside
end-, endo-	within, inside
epi-	upon
inter-	between
intra	within

post-	behind
postero-	back or posterior to
sub-	under
trans-	across

Always note context

As you see in the above table, post means behind. This prefix, though, must be read contextually to parse the correct meaning of the medical term in question. For example, postcordial means *behind* the heart, whereas postvaccinal means *after* vaccination. In one instance post- indicates a location and in the other instance, post- indicates time.

While dual meanings attributed to word parts aren't overly common, they're not uncommon either. Consider anteversion, the tipping forward of an organ, versus antepartum, before childbirth.

In another sense, you can think of post- and ante- as each have one definition:

- Post-: after, in space or time
- Ante-: before, in space or time

The point to remember is, when deconstructing medical terms, use common sense, equal parts logic and familiarity.

Medical prefixes: Time or speed

PREFIX	MEANING
ante-	before
brady-	slow
chron-	time, long time

pro-, pre-, ante-	before
re-	again
retro-	back/backward
tachy-	fast

Medical prefixes: Number or quantity

PREFIX	MEANING
a-, an-	absence of, without
bi-, di-	two
de-	down from, lack of, remove
dipl-, diplo-	double
equi-	equal
hemi-	half (one of two sides)
mono-, uni-	one
multi-	many

poly-	many
quad-, quadri-	four
semi-	half
tri-	three

EXAMPLES: Analgesia is the absence of felt pain. Hemianalgesia is the absence of felt pain on one side of the body. Conversely, panphobia is a fear of everything. The term pancytopenia refers to the abnormal depression of all the cellular elements of the blood.

Medical prefixes: Level

PREFIX	MEANING
eu-	normal/good
hyper-, super-	above normal
hypo-	below normal
infra-	beneath
poly-	much
supra-	above
ultra-	beyond

PREFIX	MEANING
a-, de-	without
anti-, contra-	against
auto-	self
dys-	abnormal, bad
eti-	cause
homo-	same
iso-	equal or same
mal-	bad
ne-	new
olig-, oligo-	little, deficient

Catching subtleties

Can you differentiate neonatal from prenatal? The root word, *natal*, means pertaining to birth. So, neonatal is new birth, (specifically, the first four weeks after birth), and prenatal means before birth.

Medical prefixes: Size

PREFIX	MEANING
gran-	grain or particle

micro-	small

Common Suffixes

Medical suffixes: Procedures

SUFFIX	MEANING
-ectomy	excision, removal of
-pexy	fixation
-plasty	mold, shape
-rhaphy	suture
-scopy	visual examination
-stomy	surgically created opening
-tomy	cut in
-tripsis	rub, crush

Medical suffixes: Pathology, condition, or function

SUFFIX	MEANING
-algia	pain

-genic	causing
-itis	inflammation
-ly, -lysis	dissolve or destruction
-oid	like, resembling
-oma	growth, mass, tumor
-osis, -esis, -iasis	abnormal condition or disease
-pathy	disease
-penia	deficiency
-pnea	breathing
-rrhag, -rrhage, -rrhagia	burst, excessive flow
-sis	process, action, or condition

Pay attention to spelling

Ilium and ileum. A one-letter substitution and you have a different word, which is why you'll need to examine provider documentation as it pertains to your professional responsibilities.

Spelling matters when it comes to reading a patient's diagnosis, test results, medicine prescriptions, and treatments. Incorrectly interpreting patient information can adversely affect patient care.

Tip: In addition to taking caution with look-alike words and medical abbreviations, familiarize yourself with the plural form of common suffixes you'll encounter.

You could, for instance, say sacromas instead of sarcomata, but you need to know plural form well enough to recognize what you're reading.

How a medical term is made plural depends on the last two letters of its singular suffix.

Pluralizing medical terminology suffixes

Singular	Plural	Example
-a	-ae	bursa, bursae
-anx, -inx, -ynx	-nges	phalanx, phalanges
-en	-ina	foramen, foramina
-ex, -ix, -yx	-ices	cervix, cervices
-is	-es	diagnosis, diagnoses
-it is	-itides	meningitis, meningities
-ma	-mata	sarcoma, sarcomata
-on	-a	ganglion, ganglia
-um	-a	diverticulum, diverticula
-us	-es, -i	plexus, plexuses and embolus, emboli
-x	-ces	thorax, thoraces

Take a medical terminology course

In addition to anatomical terms, conditions, diseases, injuries, surgical procedures, and medical treatments — all of which number in the thousands — you also need to navigate a myriad of drugs, equipment, and supplies. And not all body parts and medical words are composed of identifiable components.

Consider the integumentary system. The skin is the body's largest organ and is studied as an anatomical system, just like the musculoskeletal system, urinary system, nervous system, endocrine system, etc. But the “skin” system gets its name from *integument*, a Latin word that means to cover. Integument is just one example of a medical word that is not intuitive, as it cannot be broken down into recognizable parts.

You’ll also encounter medical terminology referred to by multiple terms, as well as eponyms (words derived from someone’s name) and acronyms, ands words derived from Latin and French.

For this reason, AAPC requires students training for a career in medical coding to take a medical terminology class. The importance of a reliable and expansive medical vocabulary, in addition to knowledge of human anatomy, can’t be understated.

Get a medical dictionary

Albert Einstein is credited with saying, "Never memorize what you can look up in books." Smart man. You will undoubtably commit much of your career training to memory, but the human brain has limits.

So start building a library, and choose a good medical dictionary for your first purchase. You'll need a comprehensive resource — *Dorland's Illustrated Medical Dictionary* or *Stedman's Medical Dictionary for the Health Professions and Nursing*. If you’re tempted to cut costs and go with free web content, you won't have access to the information you need. Consider buying used instead.

The Coders' Dictionary & Reference Guide is designed for coding and billing students. You can reference anatomical illustrations and industry acronyms, as well as an extensive glossary of coding, billing, and medical terms. It's worth taking a look inside to see if this book meets your needs.

But don't forget, you'll also find helpful info in your CPT® code books. This includes illustrations, diagrams, and medical abbreviations. For those with Codify subscriptions, you can add Dorland's Illustrated Medical Dictionary, which gives you full content and makes deciphering chart note terms easy.

Stoke your motivation

Why are you studying medical terminology? For many of you, the answer to that question is a rewarding career in medical coding and billing. Our final tip to acing medical terminology, then, is to keep that career goal front and center. Motivation will fuel your studies, helping you to go the distance and to enjoy the journey.

Reference

Dorland's Illustrated Medical Dictionary. 28th ed. Philadelphia: W.B. Saunders Co., 1994.

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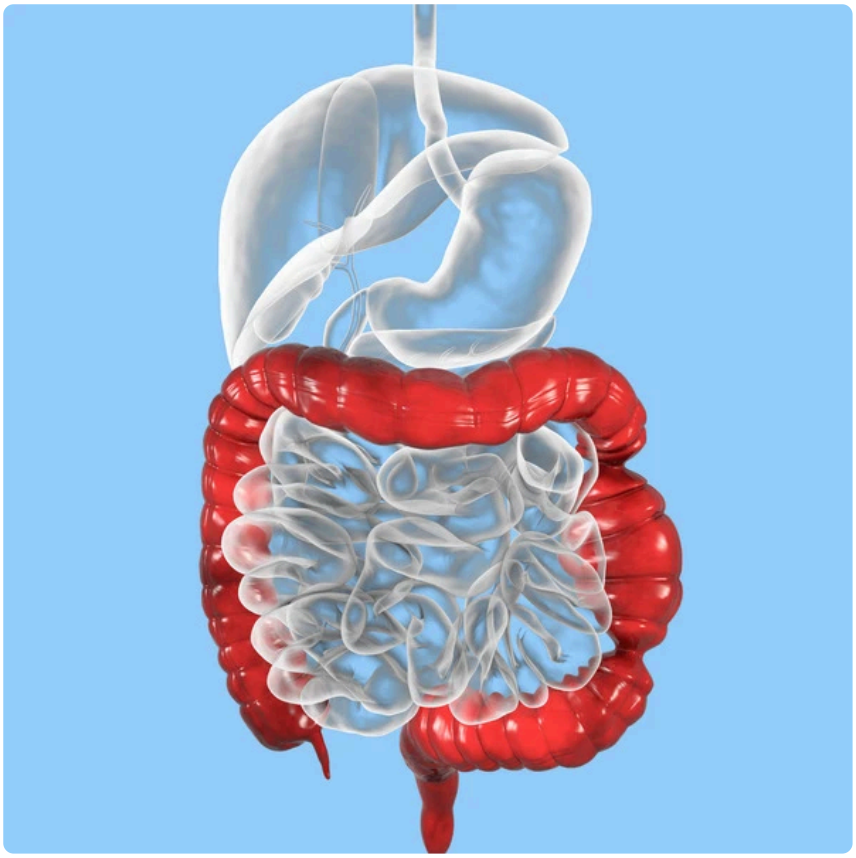

Set yourself up for success. Get the prerequisite training you need.

Medical coding and billing takes time and practice to learn. And getting up to speed on the terminology and knowledge required can be like learning a whole new language.

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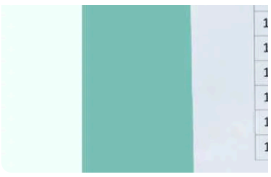

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