

LEARNING MADE EASY



4th Edition

# Medical Terminology

for  
**dummies**<sup>®</sup>  
A Wiley Brand



Understand prefix,  
root, and suffix origins

Break down and piece  
together definitions

Write and speak like a  
healthcare professional

Beverley Henderson, CMT-R, HRT  
Jennifer L. Dorsey, PhD





# Medical Terminology

4th Edition

**by Beverley Henderson, CMT-R, HRT  
and Jennifer L. Dorsey, PhD**

**for  
dummies<sup>®</sup>**  
A Wiley Brand

## Medical Terminology For Dummies®, 4th Edition

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# Introduction

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**W**elcome to *Medical Terminology For Dummies!* Consider this your personal, private course in the study of the medical terms used every day in doctors' offices, hospitals, clinics, billing and insurance companies, labs, and even pharmacies. This is a grand tour through not only the world of medical terminology, but also through your own body.

You'll find as you read this book that learning medical terms is a two-part proposition. First, you've got to master the landscape of language itself. Don't worry, though — there will be no quiz. We just want you to better understand how to both create and break down words. Once you get to know more about prefixes, suffixes, and root words, you can do darn near anything with the terminology. For example, you can go inside the body to discover the terms that match up with different systems, diseases, procedures, and pharmaceutical products.

Mastering medical terminology involves more than just memorizing. Exploring these terms and how they can be created will not only unlock medical mysteries for you, but great opportunities as well.

## About This Book

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Getting to know the world of medical terminology can get a bit repetitive at times. That's why we decided to break the book down into several parts about all kinds of different things. You start by getting the back story of terminology — the history and the players involved with bringing this “language” to the masses. Then you get into the nitty-gritty of how words are formed and all about word parts, usage, pronunciation, and recognition. We've also included a new chapter in this edition about the terminology associated with global health emergencies such as pandemics, reflecting the continuing influence of the COVID-19 era on healthcare. Finally, you take a gander at all the different body systems and the words associated with them. We even throw in some bonus top ten lists at the end that we hope you find useful.

There's a lot to learn about medical terminology, we admit, but we'll be right there with you for the whole wild, crazy ride. Keep in mind that you don't have to read this book cover to cover, nor do you have to remember all the details from chapter to chapter. Read out of order; skip what you don't need. It will all be there for you should you choose to revisit the sections, tips, or sidebars at another time.

Keep in mind that this is not a giant textbook of terms, nor is it a dictionary. Those are both great resources, and we recommend that you pick up both if you are a medical professional. This is a friendly take on the topic, and our main goal is to show you the basics of how these words are made so that you can go out in the big, bad world and master the creation and use of medical terms in your own way. We're not giving you a fish; we're teaching you to fish.

We do rely on some conventions within this book that you may not see elsewhere, in an attempt to keep the tone fun and conversational. So please be prepared to see:

- » Chapters about language and medical terminology's place in it. You will notice that we also make extensive use of lists in this book. We do this for your sanity. Be honest: Wouldn't you rather be able to study these terms in organized, easy-to-find lists and tables rather than picking through long, boring paragraphs trying to find the words you need to know? We thought so.
- » Tables that provide insight into the construction of medical terms. Many of these are shown in various forms with the use of "/". In these cases, the root word appears before the "/" and is then followed by the combining vowel or other combining sound. For example, if you see *crani/o*, it indicates that *crani* is the root word and *o* is the combining vowel.
- » New terms in *italics* to make them easier to spot.
- » Major chapters divided by systems of the body. Each system chapter tells you a bit about how that particular body system works, to give you some context for its words.
- » Artistic renderings in many of the body system chapters. Don't be alarmed by those little pictures you see peppering the pages of this book. Feel free to be distracted, however — that's the point. We want you to stop and look at these great kernels of knowledge as you read through the book.
- » Simple language. We aren't doctors, so we try our best to explain things using simple language. That means you may see words like *pee* and *poo* from time to time. We figure you're knee-deep in official-sounding terms here, so it doesn't hurt to lighten up once in a while.

# Foolish Assumptions

We are assuming you fall into one of these categories:

- » A medical student hoping to get a jump-start on general terminology before that first big quiz.
- » A medical professional looking to brush up on terms if you're a bit out of practice or just want to know more about how these terms are made.
- » A curious adult interested in speaking your health professional's language and learning more about the terms that describe how your body functions.

No matter what possessed you to pick up this book, we hope it gives you the terminology boost you need for your particular circumstances. The human body has hundreds and hundreds of working parts, and they all have names. Moreover, there are names for all kinds of associated terms relating to functions, conditions, diseases, pathology, and even pharmacology. It's a whole lot, we grant you. But you are eager, right? And no number of 50-cent words frightens you away from your goal: to become a medical terminology Zen master. You can do it!

## Icons Used in This Book

This book makes extensive use of icons — those little pictures that denote an important tidbit of information. Be on the lookout for these, as they provide even more tools for your terminology toolbox:



TIP

Points out concrete tips and tricks that you can put to use as you are studying medical terminology.



REMEMBER

Highlights passages that are good to keep in mind when mastering medical terminology.



WARNING

Alerts you to common mistakes that can trip you up in your medical terminology studies.



TECHNICAL  
STUFF

This icon indicates something cool and perhaps a little offbeat from the discussion at hand.

# Beyond the Book

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In addition to the material in the book you're reading right now, this product also comes with some access-anywhere goodies on the web. No matter how hard you study for your medical terminology exams, you'll likely come across a few questions for which you don't have a clue. To check out the free Cheat Sheet, go to [www.dummies.com](http://www.dummies.com) and type "Medical Terminology For Dummies Cheat Sheet" in the search box. The Cheat Sheet gives you more helpful information about the body's systems, medical terminology root words, Greek origins, and commonly misspelled terms. In addition, we provide you with some great online bonus content; you can explore this by visiting [www.dummies.com/go/medical-terminologyfd4e](http://www.dummies.com/go/medical-terminologyfd4e).

# Where to Go from Here

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By all means, if you're feeling spunky you can jump right into this book at any point and start working on your terminology savvy. Mastering the how and why of medical terms is sometimes as important as learning the terms themselves, which is why we put those chapters first. But by all means, feel free to hunt and peck the sections that are most useful to you.

Be bold. Be brave. And, most importantly, proceed through this book with confidence. Once you get the hang of how these words are made, you'll have no problem committing them to memory and to your daily life.

# 1

**Living for  
Linguistics**

## **IN THIS PART . . .**

Gain an overview of the basic building blocks of learning terminology.

Discover a background dossier on terminology and its history.

Understand root words, prefixes, and suffixes.

Journey through the world of multiples and plurals.

Acquire tips and tricks on pronunciation and usage.

#### IN THIS CHAPTER

- » Getting to know the history of medical terminology
- » Mastering the basics of word building and pronunciation
- » Familiarizing yourself with basic parts of your anatomy
- » Discovering the wide range of systems in the body

## Chapter **1**

# Scrubbing In to Master Medical Terminology

**D**id you realize that when you picked up this book, you were beginning a journey into a whole new language? Don't worry — you haven't grabbed *Greek For Dummies* by mistake — it's all English, or at least "English." But once you get deep into the world of medical terms, you will find that it is a whole new way of speaking. Your journey will indeed take you to ancient Greece as well as to Rome. You will meet some of the pioneers of the medical world. You will gain entrance into a whole new world: the body.

## The Tale behind the Terms

Medical terminology is made up of the terms that describe human anatomy and physiology (body organs, systems, and their functions), body locations, diseases, diagnostic imaging, and laboratory testing, together with clinical procedures, surgeries, and diagnoses.



REMEMBER

It's important for every one of these things to have a specific name — just as it's important that you have your own unique name — because otherwise how would medical professionals be able to communicate clearly with one another? You may be able to visit your doctor and say, “I have a pain in my shoulder,” and have them solve the mystery of what is causing that pain. But when your doc communicates that information to, say, a surgeon, it's crucial to be more specific.

The beauty of medical terminology is that it makes such vital communication more succinct and to the point. A medical term usually describes in one word a disease or condition that, under normal circumstances, would take several words to describe. *Appendectomy* is a one-word medical term to describe “surgical removal of the appendix.” Now that saves you plenty of breath for more important things, like singing in the car or rooting for your favorite sports team.



TECHNICAL  
STUFF

The foundation of medical terminology is based in both Greek and Latin origins. The Greeks were the founders of modern medicine, but Latin is the basic source of medical terms. With origins in ancient Rome, Latin quickly made its way through the world, solidifying its rep as the language of choice for medicine and science. Building on guidance from the Greek and Latin origins, medical terms began to be professionalized in the mid-1800s. The first medical dictionary appeared in the 1830s shortly after the first edition of *Webster's American Dictionary of the English Language*.

## Making Terminology Work for You

Thankfully, there are ways to wade through the quagmire of medical terms and figure out how to pronounce and use them like a champ. But you have to start at the beginning by breaking down the parts of each word and then deciphering its meaning. Or, to put it in a fancy-schmancy way, you should use etymology. *Etymology* helps you find the origin and historical development of a term. You can use etymology to decipher words with Latin and Greek origins, *eponyms* (words named after people), and *acronyms* (modern language terms that stand for longer phrases).

Back to those word parts that you'll break down. There are three you need to know: roots/combining forms, prefixes, and suffixes. *Roots* are the glue that holds all medical terms together. They are the basic form around which the final word is formed. A *combining form* is a combining vowel (usually *o* or *i*) plus the root word, usually with a prefix or suffix added. *Prefixes* appear at the beginning of a word and tell the how, why, where, when, how much, how many, position, direction, time, or status. The *suffix*, always at the end of a word, usually indicates a procedure, a condition, or a disease. Although the prefix gives you a clue into what to expect in a word's meaning, the suffix tells you what is happening with a specific

body part or system. And, usually, it either entails what is wrong with you or the procedure used to diagnose or fix it.

The breaking down of words that you find in this book also helps you with pronunciation. With medical terminology, sounds are not always pronounced the same as in English, and there are no steadfast rules that a combination of specific letters will always be pronounced in the same way.

## Building a Foundation of Vocabulary

Getting the basics of word formation and pronunciation down pat is the hard part. Once you can do that, you can move on to building your word vocabulary. Even though medical professionals like to joke that terminology is like a foreign language (sometimes, yes), don't throw this book out the window just yet. The good news is that you probably already know a lot of medical terms and you can use those to build up the rest of your newfound vocabulary.

Remember your grade school days when you used all kinds of little tricks to remember things like multiplication tables and the state capitals? The same principle applies to new medical terms. You can make lists of word parts, list words by similar sound, map words, or memorize terms by body system. And those are just a few ideas. Do whatever works for you, even if it's singing terms to the tune of "Defying Gravity" in the shower. We promise not to tell.

## In Terms of Anatomy

For your purposes in the land of medical terms, you can compare anatomy to the infrastructure of a building. The walls, floors, bricks, plaster, electrical system, plumbing, and so forth all help keep the building working for the people who inhabit it. Your body's anatomy is no different, which is why you are going to read about these particular terms first. Once you get the basics of what holds your body together, you can go on to find out about the physiological systems that make your body react to both internal and external circumstances.

First on your anatomy checklist is the skeletal system. This is your body's frame, much like the frame of a building. This system, along with its joints, works together with the muscles to give you the support and movement you need every day. The bony skeleton provides the jointed framework for the body, giving it shape, protecting vital organs from external injury, and providing attachment points for muscles, ligaments, and tendons.

Working together with the skeleton is the muscular system, in which several different major muscle groups work together. Made up of over 600 muscles and joints, this system is responsible for movement.

Covering all this infrastructure is the integumentary system. Your skin, glands, nails, and hair work like the facade, or outside covering, of a building. They are the things people see when they look at you. The outside of your “building” often shows the world how healthy the rest of your body is. Healthy skin, along with accessory organs, glands, hair, and nails, are the hallmarks of healthy insides, so care for them accordingly.

Your sensory system is all the fun stuff in your building. The windows, amenities, sound system, and dining facility all bring aesthetic delight to the building’s inhabitants, and your senses work in a similar fashion.

It may be hard to imagine that words can describe all the amazing things your anatomy can do, but believe us when we say that it’s all possible through terminology. And who knows? Perhaps there’s a word out there that hasn’t been created yet — until you came along.

## All Systems Go

Once you get those basic working parts ingrained in your brain, you will move on to the physiology terminology. Physiology deals with the remaining body systems that help your fabulous body do its day-to-day work.

First up is the thing that keeps your blood pumping and your life moving forward each day: your heart. More specifically, the cardiovascular system. Your heart does not work in a vacuum. It has supporting players, namely your blood cells and vessels. These parts all work together to supply your body with fresh, clean, oxygenated blood.

Then there is the separate but complementary lymphatic system that works to flush your body of impurities. Most directly associated with immunity, the lymphatic system works in the same context as the cardiovascular system due to the similar makeup of the system and the fact that, once cleaned by the lymph nodes, lymphatic fluid is released directly into the bloodstream. Lymph vessels are arranged in a similar pattern as the blood vessels.

Speaking of oxygenating your blood, think about how that oxygen finds its way into your body. You may not consciously think about it every day, but breathing makes it all possible. The body’s trillions of cells need oxygen and must get rid of

carbon monoxide, and this exchange of gases is accomplished by the respiratory system. External respiration is the repetitive, unconscious exchange of air between the lungs and the external environment.

You have to breathe, but you also have to eat, and eating is way more fun. Your good buddy the gastrointestinal system helps turn those tasty meals and treats into usable energy for your body. Also called the alimentary or digestive tract, this system provides a tubelike passage through a maze of organs and body cavities, beginning at the mouth, the food entrance into the body, and ending at the anus, where solid waste material exits the body and your delicious Chinese takeout magically turns into . . . well, you know.

Moving on, the complicated endocrine system maintains the chemical balance of the body. It does this by sending chemical messengers called hormones throughout the body via the bloodstream. Hormones regulate and control activity of specific cells or organs. Slowly released hormones control organs from a distance. Endocrine glands are located in different parts of the body. They are said to be ductless, because they have no duct system to transport their secretions. Instead, hormones are released directly into the bloodstream to regulate a variety of functions of body organs. One can stimulate growth, another matures sex organs, and yet another controls metabolism. Your body has both central and peripheral glands.

Even more complicated (are we having fun yet?) is the nervous system. Working like the body's built-in computer system, it is far more complex than your laptop. Messages from the brain are relayed via the spinal cord through nerve fibers that provide connections for incoming and outgoing data. The body has more than *ten billion* nerve cells whose function is to coordinate activities of the body. This system controls our voluntary activities as well as involuntary activities. We speak, hear, taste, see, think, move muscles, and have glands that secrete hormones. We respond to pain, danger, temperature, and touch. We have memory, association, and discrimination. These functions are only a small part of what the nervous system controls.

The nervous system is made up of the central nervous system (CNS), which includes the brain and spinal cord. The peripheral nervous system (PNS) is composed of cranial nerves (that extend from the brain) and spinal nerves (that extend from the spinal cord). The autonomic nervous system (ANS) controls and coordinates the functions of the body's vital organs, such as heartbeat and rate of breathing — functions you don't even think about.

Speaking of things you don't usually think about, the urinary system is made up of the kidneys (two), ureters (also two), bladder, and urethra. This system's main function is to remove urea (the nitrogenous waste products of metabolism) from the bloodstream, and excrete it in urine from the body. Finally, there is the

reproductive system. Think about how you were made (see *Sex For Dummies* if you don't get our drift here). The male reproductive system has two main functions: to produce spermatozoa, the male reproductive cell, and to secrete testosterone, the male hormone. The female reproductive system produces the female reproductive cell, or sex cell, secretes the hormones estrogen and progesterone, and provides the conditions to establish a pregnancy, together with providing a safe place for the pregnancy to develop and grow. Reproduction is achieved by the union of the female reproductive cell, an ovum, and the male reproductive cell, a spermatozoon (sperm for short), resulting in fertilization.

This is just a quick glance at the kinds of stuff you're going to learn about your body. Of course, the appropriate terms are discussed in detail along with the simple biology background.

## The Ultimate Resource: You

A listing of well-known term references, recall devices, and word-building activities will help you apply terminology to your own personal real-world situation. The references mentioned in this book are some of the most well respected in the field, and ones we highly recommend. Of course, there are thousands of online and print resources, most of which are decent, if not downright reputable. Use your own good judgment when it comes to choosing one as your go-to source.



TIP

As you go on this journey, remember that ultimately you are your own best source of tips and tricks. Maybe you're a flashcard aficionado. Perhaps you do best when you can visualize the term with the appropriate body system. Does your smartphone rule your world? Then you know there's an app (or two, or ten) for learning medical terms on the fly. Or maybe you like a good old mnemonic device like "i before e except after c." No matter how you choose to learn and recall these terms, do what is most comfortable and useful for you. You're the captain of this ship. Now, hoist the sail!

#### IN THIS CHAPTER

- » Getting an understanding of what medical terminology is
- » Finding out how medical terms are used in the real world
- » Tracking the evolution of terminology
- » Exploring Greek and Latin roots

## Chapter 2

# Medical Terminology: The How and Why

**R**epeat after us: Context is a good thing. You love context. Mmmmm, context. It is a good idea to get to know something about your subject matter before you dive headfirst into studying it. This is particularly true with medical terminology because so much of the theory and history behind this topic shows up in the actual words and terms you will use every day.

## Defining Medical Terminology

First, what is medical terminology? It's a whole lot more than just medical words and phrases. Each word and each term is *organic*, meaning you can trace each part of the word back to a specific meaning. Cobbled together, these parts make up the meaning of the word. Medical terminology is made up of terms that describe human anatomy and physiology (body organs, systems, and their functions), body locations, diseases, and diagnostic imaging and laboratory testing, together with clinical procedures, surgeries, diagnoses, and pharmacology.



REMEMBER

A medical term usually describes in one word a disease or condition that, under normal circumstances, would take several words to describe.

For example, consider two terms commonly known to most people. *Tonsillitis* is a one-word medical term to describe “inflammation of the tonsils,” and *adenoidectomy* is a one-word medical term to describe “surgical removal of the adenoids.”

It’s much easier to use one word than a long, drawn-out phrase to describe these conditions, don’t you think?

## Medical Terminology in the Real World

The need or desire to learn medical terminology is not limited to healthcare professionals. For example, a firefighter has to relay information to paramedics, such as the condition of a burn victim being placed in an ambulance. A police officer must complete a written report after delivering a baby in the back seat of a car. Or closer to home, think about trying to understand when a doctor tells you that your child needs surgery, or why an aging parent needs to be placed in a long-term care facility. Medical terminology allows you to convey the greatest quantity of information, with the least confusion and most precision, to anyone in the world. For example, saying someone has a badly broken wrist doesn’t convey as much as saying someone has a Salter-Harris II fracture of the right distal radius with moderate lateral displacement and 28 degrees of anterior angulation. Now who’s the coolest kid in the clinic?

### In theory and practice

You don’t need prior knowledge of Greek and Latin or anatomy and physiology to build a medical vocabulary. But you do need to master the fundamentals, or the ABCs, so to speak, to be comfortable and confident with medical terminology. After you master what makes up a word, it will get easier and easier to swap out those parts to make and understand new terms on the fly.



TIP

You accomplish this by breaking down each word and identifying its parts (prefix, suffix, and root). A basic knowledge of human anatomy helps, but it’s more important to know how each body system works independently and together with other systems. Knowing that helps the puzzle pieces fit into place more easily. As you’ll read later, the root word is the primary building block for a medical term: It clues you in to the primary body part or system that the word is about. Then the prefix and suffix clue you in to what is happening with that part or system, whether it’s a condition, disease, procedure, diagnostic, or pharmacological term.