

# Illustrated Guide to Medical Terminology

SECOND EDITION



Juanita J. Davies



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Illustrated Guide to  
**Medical  
Terminology**

SECOND EDITION



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Juanita J. Davies



Australia • Brazil • Mexico • Singapore • United Kingdom • United States



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Dedication  
To Jim





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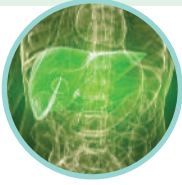
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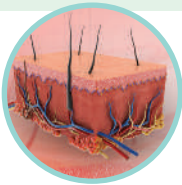
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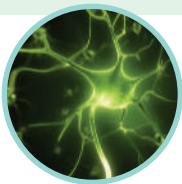
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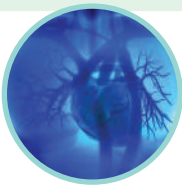
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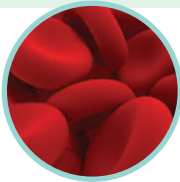
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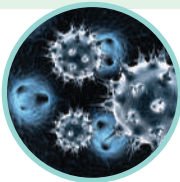
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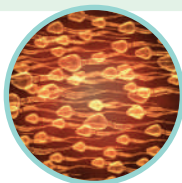
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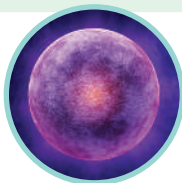
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# PREFACE

## Development of the Text

Most learners find the structure of the body and its diseases very interesting to learn. However, over the years, I observed many of my students struggle with the written material to be learned. My colleagues said the same thing—they sensed frustration in many learners. More and more frequently, I found myself thinking that a comprehensive book with extensive illustrations and very simple writing would be very useful. That's what led me to write *Illustrated Guide to Medical Terminology*. I wanted to make it easy and enjoyable for every student to learn anatomy, physiology, medical terminology, and pathology.

The theme of this book is “Read, Look, and Listen so you can Speak and Write.” This means that you first read the text and then look at diagrams corresponding to what you have read. Often you are asked to write the names of parts on the diagrams. Then, you complete the review exercises and listen to terms from the chapter pronounced (the audio pronunciations can be found on the Student Companion Website). You are asked to say the terms and then write them down. This process of reading the text, looking at the diagrams, writing in the structure names, completing the review exercises, listening to and repeating the correct pronunciation of terms, and finally writing the terms down on paper is the best way to learn. *Illustrated Guide to Medical Terminology, 2e* is ideal for visual and auditory learners, as well as learners whose first language is not English. I hope it serves you well.

## Text Organization

*Illustrated Guide to Medical Terminology, 2e* is organized based on the body-system approach. After more than 30 years of teaching, I feel confident that this is the most effective and learner-friendly way to teach terminology.

Chapter 1 outlines the proper way to analyze terms. Chapter 2 presents basic body organization and introduces the common anatomical roots. Chapter 3 introduces suffixes, and Chapter 4 presents prefixes. Chapter 5 explains how the body is organized. The remaining 14 chapters are each devoted to a single body system.

## Chapter Organization

Each chapter begins with a very brief chapter outline in point form. This is followed by the learning objectives for the chapter, also in point form, and a brief introduction. In the body system chapters, an illustration of the body system to be studied immediately follows the introduction. The purpose is to provide a broad overview of the body system before details are presented. Each chapter has diagrams illustrating body structure, function, and disease. The text associated with the diagrams is as simple as possible. Regular review is accomplished by the use of sidebars that contain brief summaries. Memory devices designed to enhance learning are also included.

Vocabulary building is presented throughout each chapter. Near the end of each chapter is a list of common system-specific terms and their pronunciation. This list, used together with the accompanying audio files, accomplishes the objective of having the learner listen to the correct pronunciation in order to speak and write the medical terms correctly. Quizzes with answers included throughout each chapter allow learners to test themselves on the content presented before moving on to new content in the chapter.

## Features Designed to Enhance Learning

This is the most comprehensive of the short-course medical terminology books on the market. The writing is simple and straightforward, even though the content is quite challenging. Despite the brevity of the textual material, each chapter tells a story so that the learner can chunk the information, which allows for ease of learning.

Be sure to read the **How to Use This Book** section on page XXV for detailed descriptions and images of the many features specifically developed to enhance your learning of medical terminology.

## New to This Edition

### Chapter 1

- Significantly rewritten

### Chapter 2

- Minor changes

### Chapter 3

- New terms added to Learning the Terms

### Chapter 4

- New terms added to Learning the Terms

### Chapter 5

- Content on body planes rewritten



## Chapter 6

- Additional topics added: subcutaneous tissue, accessory structures
- New terms added to Learning the Terms
- Pathology added: bruises, lesions, skin infections
- New images: cutaneous lesions

## Chapter 7

- New terms added to Learning the Terms
- Pathology added: abnormal curvatures, fractures
- Added table of bones, common names, and adjectives
- New images skull, abnormal spinal curvatures, and fractures

## Chapter 8

- New terms added to Learning the Terms
- Pathology added: carpal tunnel syndrome

## Chapter 9

- Additional topics added: synapse, protective coverings
- New terms added to Learning the Terms
- Pathology added: amyotrophic lateral sclerosis, levels of consciousness, poliomyelitis, sciatica, types of seizures
- New images: protective coverings

## Chapter 10

- Additional topics added: accessory structures
- New terms added to Learning the Terms
- Pathology added: otitis media, otosclerosis
- New images: flow of aqueous humor, accessory structures, extraocular muscles, normal versus abnormal vision

## Chapter 11

- Additional topics added: teeth, salivary glands
- New terms added to Learning the Terms
- Pathology added: cleft palate, cleft lip, cirrhosis of liver, diverticulosis hemorrhoids, hiatal hernia intestinal obstruction
- New images: structures of the tooth, salivary glands, stomach, hiatal hernia, intestinal obstruction, diverticulosis

## Chapter 12

- Additional topics added: Major arteries and veins
- New terms added to Learning the Terms

- Pathology added: arrhythmia, types of strokes, congestive heart failure, murmur, valvular disorders
- New images: electrocardiography, common arteries, common veins, cardiac catheterization, angioplasty, coronary artery bypass surgery

#### Chapter 13

- New terms added to Learning the Terms

#### Chapter 14

- No changes

#### Chapter 15

- New terms added to Learning the Terms
- Pathology added: allergic rhinitis, cystic fibrosis, deviated nasal septum, epistaxis, pneumoconiosis, tuberculosis

#### Chapter 16

- New terms added to Learning the Terms
- Pathology added: nephrotic syndrome
- New images: vesicovaginal fistula, extracorporeal shockwave lithotripsy

#### Chapter 17

- New terms added to Learning the Terms

#### Chapter 18

- Additional topics added: obstetrics
- New terms added to Learning the Terms
- Pathology added: breast cancer revised, cervical cancer, abortion, abruptio placenta, infertility, placenta previa, pre-eclampsia, premature infant, stillbirth, uterine inertia

#### Chapter 19

- Additional topics added: thymus
- New terms added to Learning the Terms
- Pathology revised

## Resources to Accompany This Book

### Student Companion Website

The Student Companion Website contains the following resources to aid you with study and learning the medical terminology in your course:

- Audio files for pronunciation of terms
- PowerPoint presentations
- Animations and videos to help further comprehension of content areas

To set up your Student Companion account:

- Log into <https://login.cengage.com>
- Click on **New Student User** and follow the instructions for completing your account setup.
- If you already have a student account, simply login and add the book to your bookshelf.

### Instructor Companion Website

The Instructor Companion Website contains the following resources to aid you in planning your course and implementing class activities:

- Syllabus
- Instructor Manual
- Handouts
- PowerPoint presentations
- Animations and videos
- Answer key to review questions in the text
- Testbank powered by Cognition

To set up your Instructor Companion account:

- Go to <https://login.cengage.com/cb/>
- Choose **Create a New Faculty Account**.
- Next you will need to select your **Institution**.
- Complete your personal **Account Information**.
- Accept the **License Agreement**.
- Choose **Register**.
- Your account will be pending validation—you will receive an e-mail notification when the validation process is complete.
- If you are unable to find your Institution, complete an **Account Request Form**.

Once your account is set up or if you already have an account:

- Go to <https://login.cengage.com/cb/>
- Enter your e-mail address and password and select **Sign In**.
- Search for your book by author, title, or ISBN.
- Select the book and click **Continue**.
- You will receive a list of available resources for the title you selected.
- Choose the resources you would like and click **Add to My Bookshelf**.



## ABOUT THE AUTHOR

Juanita Davies has taught anatomy and medical terminology for over 30 years. She has also written extensively on the subject of medical terminology. Her early work includes *A Programmed Learning Approach to Medical Terminology* and a computerized testbank containing 15,000 questions. Her first book with Delmar, *Modern Medical Language*, is a combination of anatomy, medical terminology, pathology, signs and symptoms, diagnostic procedures, and treatment. Her second book, *Essentials of Medical Terminology*, combines anatomy with medical terminology. Her third book, *A Quick Reference to Medical Terminology*, is a basic handbook on medical terminology.





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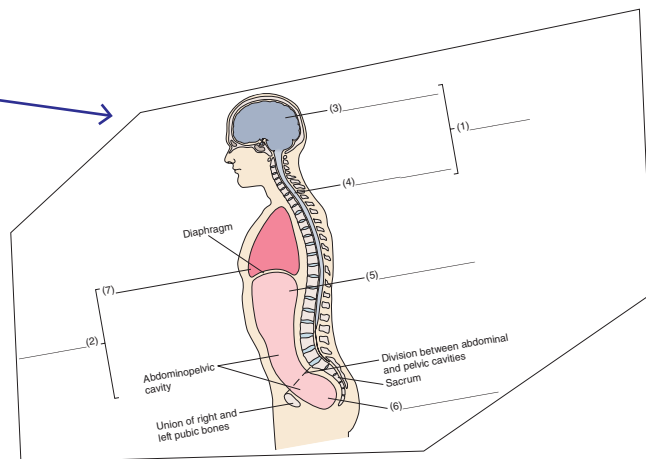
# HOW TO USE THIS BOOK

## Learner-Friendly Approach

The approach is simple—“Read, Look, and Listen in order to Speak and Write.” This means that you first read the text and then look at diagrams corresponding to the text. You are often asked to write the names of parts on the diagrams. At the end of each chapter, complete the review exercises. Go to the Student Companion Website and listen to terms from the chapter pronounced. Say the terms aloud and then write them down. This process of reading the text, looking at the diagrams, writing in the structure names, completing the review exercises, listening to and repeating the correct pronunciation of terms, and finally writing the terms down on paper maximizes your learning experience.

## Full-Color Illustrations

An illustration of the body system to be studied immediately follows the chapter introduction to provide a broad overview of the system before learning the details. Writing labels on the diagrams helps reinforce learning. Numerous diagrams illustrate body structure, function, and disease with the associated content presented as simply as possible.



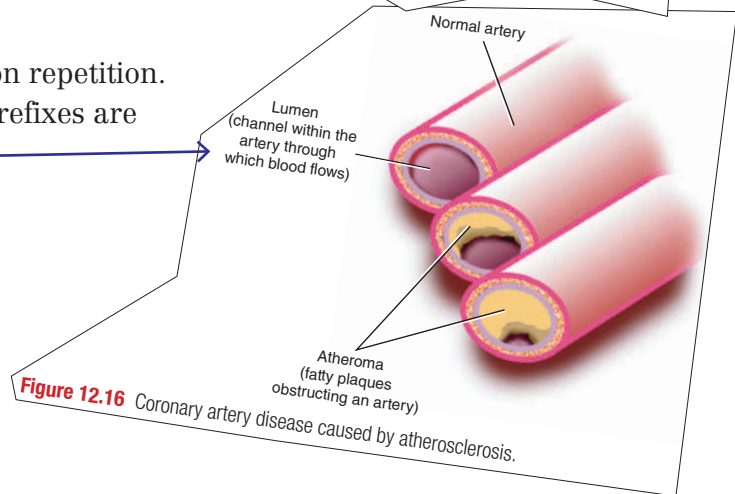
## Pronunciations

Pronunciations are presented phonetically beside every new term and are repeated throughout the chapter.

## Learning the Terms

Learning medical language is based on repetition. In each chapter, roots, suffixes, and prefixes are often repeated to reinforce learning. After each word element is introduced, it is followed by several examples of terms using that word element. This helps you remember the terms because you learn them in clusters using the same word element.

Term	ROOT ather/o	MEANING fatty debris
<b>atheroma</b> (ath-er-OH-mah)	Term Analysis -oma = mass; tumor	Definition name given to the fatty mass (plaque) that accumulates on the wall of an artery. The fatty mass contains cholesterol.
<b>atherosclerosis</b> (ath-er-oh-skleh-ROH-sis)	-sclerosis = hardening	hardening and narrowing of an artery due to an atheroma (Figure 12-16)



### Dorsal Cavity

The dorsal cavity is subdivided into two parts: the cranial cavity and vertebral cavity. The cranial cavity is inside the skull. The brain is contained in the cranial cavity. The vertebral cavity is inside the vertebral column, or spine. The spinal cord (a group of nerves) is contained in the vertebral cavity.

### Ventral Cavity

The ventral cavity contains many internal organs including the heart, lungs, kidneys, digestive organs, and others. These internal organs are also called **viscera** (VIS-er-ah). A large muscle called the **diaphragm** (DYE-ah-frag) divides the ventral cavity into upper and lower cavities. The upper cavity is called the thoracic cavity. The lower cavity is the **abdominopelvic** (ab-dom-ih-noh-PEL-vick) cavity. The thoracic cavity contains the heart and lungs. The abdominopelvic cavity is divided into two smaller cavities: the abdominal cavity and the pelvic cavity. The abdominal cavity is above the pelvic cavity. It contains organs such as the liver, intestines, stomach, and kidneys. The pelvic cavity contains some reproductive organs, the urinary bladder, and parts of the intestine.

#### In Brief

The **dorsal cavity** is subdivided into the cranial and vertebral cavities. The **ventral cavity** is subdivided into the thoracic and abdominopelvic cavities.

## In Brief

Regular review of what you have learned is accomplished through the use of sidebars that contain brief definitions of terms found on the same page.



**PRACTICE FOR LEARNING: Directional Terms**

1. Write the opposite meaning of the following directional terms. The first one is done for you.
  - a. anterior posterior \_\_\_\_\_
  - b. lateral \_\_\_\_\_
  - c. proximal \_\_\_\_\_
  - d. deep \_\_\_\_\_
  - e. prone \_\_\_\_\_
  - f. dorsum \_\_\_\_\_
2. Choose the correct answer from the choices in parentheses.
  - g. The neck is (inferior/superior) to the chin.
  - h. Your mouth is (medial/lateral) to your ear.
  - i. You have stepped on a sharp object. The bottom of your foot starts to bleed. You have cut the (plantar/dorsum) area of your foot.

**Practice for Learning**

Brief reviews ensure that you have mastered the content presented and are ready to move on to the next section of material.

**Helping You Remember**

Suggestions are provided to help you remember a difficult term or concept presented in the chapter.

**Directional Terms**

As stated above, we need directional terms to describe the position of body parts, particularly in relation to each other. Directional terms are also useful in communicating the location of diseases when they appear in the body. All of the directional terms are listed in Table 5-1. To help you remember them, they are grouped in opposite pairs. For example, the terms "superior" and "inferior" are grouped because they are opposites: superior means "above," and inferior means "below." Figures 5-2 A-F illustrate the use of the terms.

**Helping You Remember**

To remember the meaning of supine, notice that supine has "up" as part of the word.

**6.6 Look-Alike and Sound-Alike Words**  
 Below is a list of look-alike and sound-alike words. Study the definitions of each set of words. Questions will follow in the Review Exercises.

**TABLE 6-1 Look-Alike and Sound-Alike Words**

ablation	treatment that involves the excision of body tissue or the destruction of its function through surgery, hormones, drugs, heat, chemicals, or electricity
abrasion	an injury caused by scraping
glands	organs that secrete chemicals
glans	the tip of the penis (glans penis)
patience	showing self-control
patients	persons under medical care
vesical	pertaining to the bladder
vesicle	blisters
plantar	the sole of the foot
planter	container for a plant
cirrhosis	any chronic disease of the liver
psoriasis	skin condition characterized by silvery scales
Mohs	surgery for melanoma
mow	to mow (cut) the lawn with a lawnmower
wheel	a raised, circular area of skin, usually pale in the center, and surrounded by redness
wheel	round object that turns, such as the wheel on a bicycle

## Review Exercises

Numerous review exercises at the end of each chapter reinforce learning. **Look-Alike and Sound-Alike Words** lists medical terms and other words that are similar in spelling and sound. Reinforce your understanding of the correct spelling by completing the exercises that follow. **Medical Terms in Context** provides practice learning terms through mock sample medical reports.

**EXERCISE 8-6 Definitions in Context**  
 Define the bolded terms in context in the space below. Use your dictionary if necessary.

**Discharge Summary**  
**HISTORY OF PRESENT ILLNESS:** The patient is a seven-year-old boy who showed signs of muscular weakness at age three to four years. The diagnosis of **muscular dystrophy** was made when a muscle **biopsy** confirmed **degeneration** of muscle fibers. He is still walking and was started on drug **therapy** four months ago.

**PHYSICAL EXAMINATION:** On examination, the patient is a pleasant young fellow. He has **proximal** muscle weakness. He has **hypertrophy** and some shortening of the **Achilles tendon**. General physical examination is within normal limits.

**COURSE IN HOSPITAL:** While in the hospital, an **intravenous** line was started, and blood samples were taken for tests during a 24-hour period. The course in hospital was eventful.

**Pronunciation and Spelling Exercises** in each chapter helps you learn the common system-specific terms and their pronunciation.

**5.9 Pronunciation and Spelling**

- Listen to each word on the audio file provided on the Student Companion Website.
- Pronounce each word carefully.
- Spell each word in the space provided.

Word	Pronunciation	Spelling
epigastric	ep-ih-GAS-trick	
hypogastric	high-poh-GAS-trick	
iliac	ILL-ee-ack	
abdominal	ab-DOM-ih-nal	
cranial	KRAY-nee-al	
dorsal	DOR-sal	
cutinal	ING-gwih-nal	
	ee-al	

## CHAPTER 1

# Basic Word Structure



### Chapter Outline

*This chapter will help you learn the basics of medical word structure. It is divided into the following sections:*

- 1.1** Analysis of Medical Word Parts
- 1.2** Basic Word Structure
- 1.3** New Roots, Suffixes, and Prefixes
- 1.4** Review Exercises

### Learning Objectives

*After studying this chapter and completing the review exercises, you should be able to:*

- 1.** Define a root, suffix, and prefix.
- 2.** Distinguish between roots, suffixes, and prefixes in a medical word.
- 3.** Learn the basic rules of medical word structure.
- 4.** Write the meaning of the roots, suffixes, and prefixes found in this chapter.
- 5.** Build medical words.
- 6.** Define medical words.

### Introduction

Medical words are made of parts. You need to learn what the parts are and what they mean in order to easily learn medical words. This chapter will teach you how to do that.