

Medical Terminology

An Illustrated Guide

8th edition

**Barbara Janson Cohen
Ann DePetris**



Wolters Kluwer



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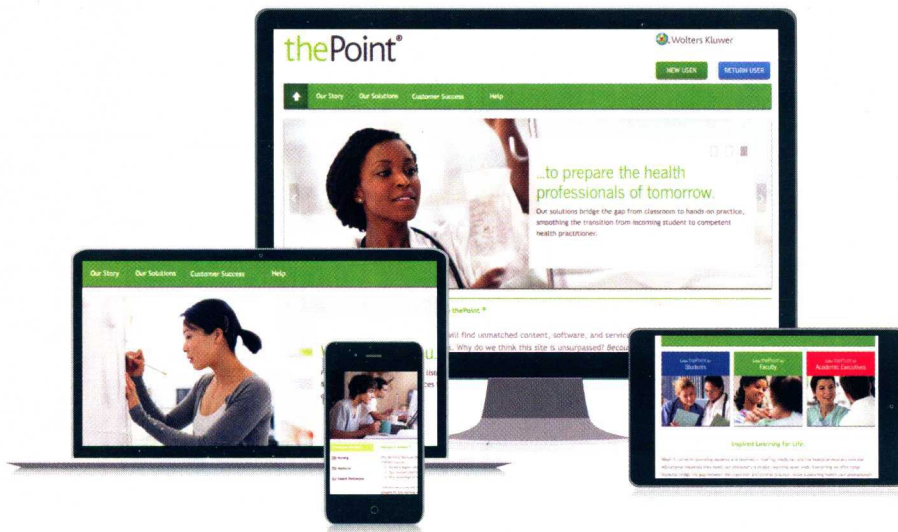
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Medical Terminology

An Illustrated Guide

8th edition

For all his continued personal and professional support over so many years, I dedicate this 8th edition of *Medical Terminology: An Illustrated Guide*, to my husband, Matthew Jarvis Cohen.

—Barbara Cohen

To my husband Michael and my children, Drs. Bob and Marie Howard, Paul and Maria DePetrìs, for their unrelenting support and patience; to Shirley Wells and Dr. Janice Griffin for their continued encouragement and love; and to Barbara Cohen without whose commitment and guidance this would not have been possible. It's to all of you I dedicate this edition.

—Ann DePetrìs

► Preface

Knowledge of medical terminology is fundamental to a wide variety of healthcare fields. This book is designed to satisfy the basic learning requirements needed to practice in any health career setting. In the course of your training and future careers, you will need to learn thousands of new terms. The job might be overwhelming if not for learning the skills of dividing the words into their component parts. These roots, suffixes, and prefixes appear over and over in different terms but retain the same meanings. Knowing these meanings will help you define and remember a host of words. This process is like using a set of building blocks to assemble different structures. Using a more scientific example, it's like using the four bases in DNA to code for all the amino acids needed to make proteins.

After the introductory sections, each chapter begins with an illustrated overview of a specific body system with definitions of the key terms related to that system. Tables of word parts and exercises on using them follow. Turning to the abnormal, a section on diseases and treatments is included, followed by definitions of relevant key terms. The section of supplementary terms includes words and phrases that are “good to know” if time allows or if someone is particularly interested in that specialty. The sequence of the systems chapters differs slightly from that found in traditional anatomy and physiology books. The organization emphasizes their clinical importance, starting with the

cardiovascular, respiratory, and digestive systems and continuing with systems treated in more specialized fields, such as the urinary, reproductive, and musculoskeletal systems. The chapters can be taken out of order once the introductory units are completed.

We have tried to make this book easy to use and full of reinforcing drills. We have also included many phonetic pronunciations so you can recognize technical terms when they are spoken and can comfortably use them yourself. The online student learning resources offer many additional activities and an audio glossary. Each chapter is enlivened with a short opening case study. These may have some words and abbreviations that are unfamiliar to you, especially at the start of the book. They are included to spark your interest in the chapter material, and give you a sense of medical situations and language. Don't be concerned if you don't understand them completely. Return to them after you study the chapter, or even later chapters, and see if they are more understandable.

You are probably at the beginning of a long journey to gain accomplishment in your chosen field. We hope that this book will aid you in that endeavor and provide a basis on which to build your career.

—Barbara Cohen
—Ann DePetrìs

► Acknowledgments

In our constant quest to improve the quality of *Medical Terminology: An Illustrated Guide*, we rely on the advice and talents of many people. First, we want to acknowledge the observant instructors and students who take the time to suggest improvements in the text. Also we thank the reviewers, who make many valuable suggestions for revisions. The clinicians who contributed current information in their respective fields include Margaret O. Burr, BS, RVT, RDMS; Michael DePetris, RPh; Paul DePetris, BS; Mary Green, PA-C; Nancy Gurzick, RDH, BS, MA; Marie Howard, PT, DPT; Robert Howard, DO; Bonnie L. Lehman, BSN, MS, CNM; Christine Licari, RD; Pamela Morgan, OTR/L; Christina Olkowski, MT (ASCP); Donna Robertson, RNC, MSA;

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—Barbara Cohen
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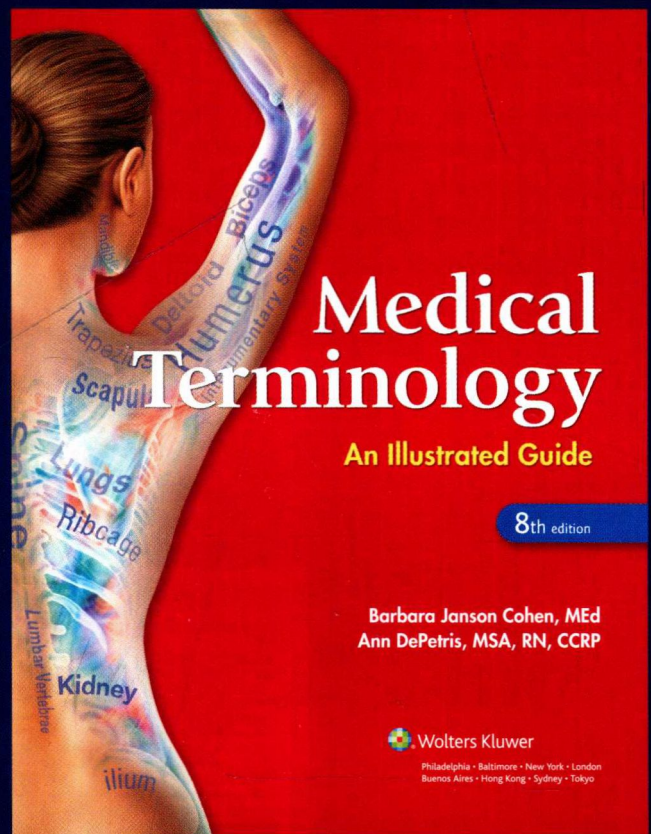
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USER'S GUIDE

Medical Terminology: An Illustrated Guide, 8th edition, was created and developed to help you master the language of medicine. The tools and features in the text will help you work through the material presented. Please take a few moments to look through this User's Guide, which will introduce you to the features that will enhance your learning experience.



Learning Objectives

After study of this chapter you should be able to:

- 1 Describe the composition of the blood plasma. **p206**
- 2 Describe and give the functions of the three types of blood cells. **p206**
- 3 Differentiate the five different types of leukocytes. **p208**
- 4 Explain the basis of blood types. **p209**
- 5 Define immunity, and list the possible sources of immunity. **p211**
- 6 Identify and use roots and suffixes pertaining to the blood and immunity. **p214**
- 7 Identify and use roots pertaining to blood chemistry. **p216**
- 8 List and describe three major disorders of the blood. **p217**
- 9 Describe the major tests used to study blood. **pp217**
- 10 List and describe three major disorders of the immune system. **p221**
- 11 Interpret abbreviations used in blood studies. **p227**
- 12 Analyze medical terms in several case studies involving the blood. **pp205, 234**

Case Study: Nurse Anesthetist M.R. with Latex Allergy



Chief Complaint

M.R., a 36-year-old certified registered nurse anesthetist (CRNA), noticed that her hands had a red patchy rash when she removed her gloves following cases in the OR. They began to itch after a few minutes of donning the gloves, so she figured she might have developed an allergy to the latex they contained. When she began to have a runny nose and itchy swollen eyes, she was worried and sought medical advice from her primary care physician, who referred her to an allergist.

Examination

The allergist examined M.R.'s hands and observed a localized red crusty rash that stopped at the wrists. There were a few blisters spread over the hand region. Along with the examination, a history indicated M.R. had noticed the contact dermatitis for a while when she wore powdered latex gloves in the OR, and she more recently had noted generalized

allergic symptoms during surgical cases. During a recent case, she experienced some tachycardia, urticaria (hives) and rhinitis when she came in contact with latex gloves.

Clinical Course

M.R. was diagnosed with a type I hypersensitivity. IgE, T cell-mediated latex allergy, as shown by both immunologic and skin-prick tests. Although M.R. is a CRNA, she was educated on the course of latex allergies. She was reminded that there is no cure and that the only way to prevent an allergic reaction is to avoid coming into contact with latex.

This chapter describes the composition and characteristics of blood, the life-sustaining fluid that circulates throughout the body. A discussion of immunity is included because many components of the immune system are carried in the blood. M.R.'s case of allergy is an example of immunologic hyperactivity. One of the symptoms, tachycardia, was discussed in Chapter 9 and rhinitis will be introduced in the next chapter on the respiratory system.

ANCILLARIES At-A-Glance

Visit [the Point](#) to access the following resources. For guidance in using the resources most effectively, see pp. ix-xvi.

Learning RESOURCES

- Tips for Effective Studying
- Web Figure: Hematopoiesis
- Web Chart: Childhood Immunizations
- Web Animation: Hemostasis
- Web Animation: Immune Response
- Audio Pronunciation Glossary

Learning ACTIVITIES

- Visual Activities
- Kinesthetic Activities
- Auditory Activities

Chapter Contents, Objectives, and Pretests

Chapter Opening Case Studies and Objectives help you identify learning goals and familiarize yourself with the materials covered in the chapter. Chapter Pretests quiz students on previous knowledge at the beginning of each chapter. Students should take each Chapter Pretest before starting the chapter and again after completing the chapter in order to measure progress.

Detailed Illustrations

Illustrations: Detailed, full-color drawings and photographs illuminate the chapters. These include clinical photographs and tissue micrographs. The many figures amplify and clarify the text and are particularly helpful for visual learners.

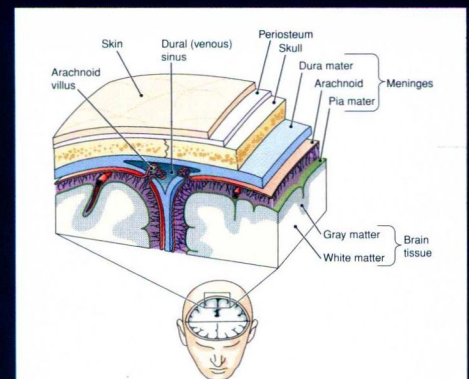
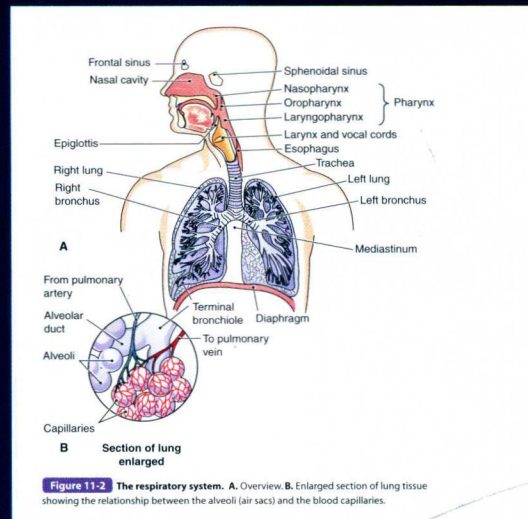
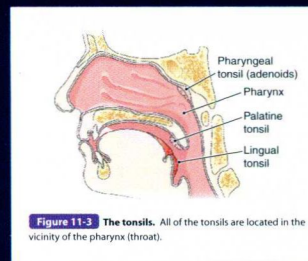


Figure 17-5 The meninges. The three protective layers and adjacent tissue are shown in a frontal section of the head.

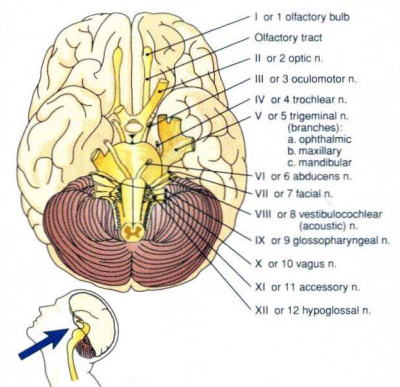


Figure 17-6 Cranial nerves. The 12 nerves are shown on one side in an inferior view.

Feature Boxes

Feature Boxes Call Out Important Information

Focus on Words boxes provide historical or other interesting information on select terms within a chapter.

FOCUS ON WORDS

Acronyms

Box 10-2

Acronyms are abbreviations that use the first letters of the words in a name or phrase. They have become very popular because they save time and space in writing as the number and complexity of technical terms increases. Some examples that apply to studies of the blood are CBC (complete blood count) and RBC and WBC for red and white blood cells. Some other common acronyms are CNS (central nervous system or clinical nurse specialist), ECG (electrocardiogram) NIH (National Institutes of Health), and STI (sexually transmitted infection).

If the acronym has vowels and lends itself to pronunciation, it may be used as a word in itself, such as AIDS (acquired

immunodeficiency syndrome); ELISA (enzyme-linked immunosorbent assay); JAMA (*Journal of the American Medical Association*); NSAID (nonsteroidal antiinflammatory drug), pronounced "en-sayd;" and CABG (coronary artery bypass graft), which inevitably becomes "cabbage." Few people even know that LASER is an acronym that means "light amplification by stimulated emission of radiation."

An acronym is usually introduced the first time a phrase appears in an article and is then used without explanation. If you have spent time searching back through an article in frustration for the meaning of an acronym, you probably wish, as do other readers, that all the acronyms used and their meanings would be listed at the beginning of each article.



CLINICAL PERSPECTIVES

Eye Surgery: A Glimpse of the Cutting Edge

Cataracts, glaucoma, and refractive errors are common eye disorders. In the past, cataract and glaucoma treatments concentrated on managing the diseases. Refractive errors were corrected using eyeglasses and, more recently, contact lenses. Today, using laser and microsurgical techniques, ophthalmologists can remove cataracts, reduce glaucoma, and allow people with refractive errors to put their eyeglasses and contacts away. These cutting-edge procedures include:

- **LASIK** (laser in situ keratomileusis) to correct refractive errors. During this procedure, a surgeon uses a laser to reshape the cornea so that it refracts light directly onto the retina, rather than in front of or behind it. A microkeratome (surgical knife) is used to cut a flap in the cornea's outer layer. A computer-controlled laser sculpts the middle layer of the cornea and then the flap is replaced. The procedure takes only a few minutes, and patients recover their vision quickly and usually with little postoperative pain.

- **Phacoemulsification** to remove cataracts. During this procedure, a surgeon makes a very small incision (~3 mm long) through the sclera near the cornea's outer edge. An ultrasonic probe is inserted through this opening and into the center of the lens. The probe uses sound waves to emulsify the lens's central core, which is then suctioned out. An artificial lens is then permanently implanted in the lens capsule (see Fig. 18-15). The procedure is typically painless, although the patient may feel some discomfort for one to two days afterward.

- **Laser trabeculoplasty** to treat glaucoma. This procedure uses a laser to help drain fluid from the eye and lower intraocular pressure. The laser is aimed at drainage canals located between the cornea and iris and makes several burns that are believed to open the canals and allow better fluid drainage. The procedure is typically painless and takes only a few minutes.

Box 18-3

Clinical Perspectives boxes focus on body processing as well as techniques used in clinical settings.

Health Professions boxes focus on a variety of health careers, showing how the knowledge of medical terminology is applied in real-world careers.



HEALTH PROFESSIONS

Radiologic Technologist

Box 5-1

Radiologic technologists help in the diagnosis of medical disorders by taking x-ray images (radiographs) of the body. They also use CT scans and other imaging technology to perform examinations on patients to aid physicians' diagnosis. Following institutional safety patient mobilization procedures; they must prepare patients for radiologic examinations, place patients in appropriate positions; and then adjust equipment to the correct angles, heights, and settings for taking the x-ray or other diagnostic image. They must position the image receptors correctly and, after exposure, remove and process the images. They are also required to keep patient records and maintain equipment. Radiologic technologists must minimize radiation hazards by using protective equipment for themselves and patients and by delivering the minimum possible amount of radiation. They wear badges to monitor radiation levels and keep records of their exposure.

Radiologic technologists may specialize in a specific imaging technique such as bone densitometry, cardiovascular-

interventional radiography, computed tomography, mammography, magnetic resonance imaging, nuclear medicine, and quality management. Some of these will be described in later chapters.

The majority of radiologic technologists work in hospitals, but they may also be employed in physicians' offices, diagnostic imaging centers (e.g., doing mammograms), and outpatient care centers. Radiologic technologists must possess a minimum of an associate's degree to qualify for professional certification. A higher degree is necessary for a supervisory or teaching position. The Joint Review Committee on Education in Radiologic Technology accredits most of the education programs. The American Registry of Radiologic Technologists (ARRT) offers a national certification examination in radiography as well as in other imaging technologies (CT, MRI, nuclear medicine, etc.). ARRT certification is required for employment as a radiologic technologist in most U.S. states. Job opportunities in this field are currently good. The American Society of Radiologic Technologists has information on this career at www.asrt.org.



FOR YOUR REFERENCE

Blood Cells

Box 10-1

Cell Type	Number Per Microliter of Blood	Description	Function
Erythrocyte (red blood cell)	5 million	Tiny (7 μ m diameter), biconcave disk without nucleus (anuclear)	Carries oxygen bound to hemoglobin; also carries some carbon dioxide and buffers blood
Leukocyte (white blood cell)	5,000 to 10,000	Larger than red cell with prominent nucleus that may be segmented (granulocyte) or unsegmented (agranulocyte); types vary in staining properties	Immunity; protects against pathogens and destroys foreign matter and debris; located in blood, tissues, and lymphatic system
Platelet (thrombocyte)	150,000 to 450,000	Fragment of large cell (megakaryocyte)	Hemostasis; forms a platelet plug and starts blood clotting (coagulation)

For Your Reference boxes provide supplemental information for terms within a chapter.

Word Part Tables

Detailed Tables

Present roots, prefixes, and suffixes covered in each chapter in an easy-to-reference format (with examples of their use in medical terminology). Word Part Knowledge aids in the learning and understanding of common terminology.

Table 21-1 Roots Pertaining to the Skin and Associated Structures

Root	Meaning	Example	Definition of Example
derm/o, dermat/o	skin	dermabrasion <i>derm-ah-BRA-zhun</i>	surgical procedure used to resurface the skin and remove imperfections
kerat/o	keratin, horny layer of the skin	keratinous <i>keh-RAT-ih-nus</i>	containing keratin; horny
melan/o	dark, black, melanin	melanosome <i>MEL-ah-no-some</i>	a small cellular body that produces melanin
hidr/o	sweat, perspiration	anhidrosis <i>an-hi-DRO-sis</i>	absence of sweating
seb/o	sebum, sebaceous gland	seborrhea <i>seb-or-E-ah</i>	excess flow of sebum (adjective: seborrheic)
trich/o	hair	trichomycosis <i>trik-o-mi-KO-sis</i>	fungal infection of the hair
onych/o	nail	onychia <i>o-NIK-e-ah</i>	inflammation of the nail and nail bed (not an -itis ending)

EXERCISE 21-1

Identify and define the roots in the following words.

1. hypodermis (*hi-po-DER-mis*)
2. seborrheic (*seb-o-RE-ik*)
3. hypermelanosis (*hi-per-mel-ah-NO-sis*)
4. dyskeratosis (*dis-ker-ah-TO-sis*)
5. hypohidrosis (*hi-po-hi-DRO-sis*)
6. hypertrichosis (*hi-per-trih-KO-sis*)
7. eponychium (*ep-o-NIK-e-um*)

Root Meaning of Root

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Fill in the blanks.

8. Dermatopathology (*der-mah-to-pah-THOL-o-je*) is study of diseases of the _____.
9. Keratolysis (*ker-ah-TOL-ih-sis*) is loosening of the skin's _____.
10. A melanocyte (*MEL-ah-no-site*) is a cell that produces _____.
11. Trichoid (*TRIK-oyd*) means resembling a(n) _____.
12. Onychomycosis (*on-ih-ko-mi-KO-sis*) is a fungal infection of a(n) _____.
13. Hidradenitis (*hi-drad-eh-NI-tis*) is inflammation of a gland that produces _____.
14. A hypodermic (*hi-po-DER-mik*) injection is given under the _____.

Exercises

Exercises are designed to test your knowledge before you move to the next learning topic that follows each table.

Term Tables

Key Terms include the most commonly used terms.

Terminology Key Terms

glomerular capsule <i>glo-MER-u-lar KAP-sule</i>	The cup-shaped structure at the beginning of the nephron that surrounds the glomerulus and receives material filtered out of the blood; Bowman (BO-man) capsule
glomerular filtrate <i>glo-MER-u-lar FIL-trate</i>	The fluid and dissolved materials that filter out of the blood and enter the nephron through the glomerular capsule
glomerulus <i>glo-MER-u-lus</i>	The cluster of capillaries within the glomerular capsule (plural: glomeruli) (root: glomerul/o)
kidney <i>KID-nee</i>	An organ of excretion (roots: <i>ren/o</i> , <i>nephz/o</i>); the two kidneys filter the blood and form urine, which contains metabolic waste products and other substances as needed to regulate the water, electrolyte, and pH balance of body fluids
micturition <i>mik-tu-RISH-un</i>	The voiding of urine; urination
nephron <i>NEF-ron</i>	A microscopic functional unit of the kidney; working with blood vessels, the nephron filters the blood and balances the composition of urine
renal cortex <i>RE-nal KOR-tex</i>	The kidney's outer portion; contains portions of the nephrons
renal medulla <i>meh-DUL-lah</i>	The kidney's inner portion; contains portions of the nephrons and ducts that transport urine toward the renal pelvis
renal pelvis <i>PEL-vis</i>	The expanded upper end of the ureter that receives urine from the kidney (Greek root <i>pyel/o</i> means "basin")
renal pyramid <i>PER-ah-mid</i>	A triangular structure in the renal medulla; composed of the nephrons' loops and collecting ducts
renin <i>RE-nin</i>	An enzyme produced by the kidneys that activates angiotensin in the blood
trigone <i>TRI-gone</i>	A triangle at the base of the bladder formed by the openings of the two ureters and the urethra (see Fig. 13-4)
tubular reabsorption <i>TUBE-u-lar re-ab-SORP-shun</i>	The return of substances from the glomerular filtrate to the blood through the peritubular capillaries
urea <i>u-RE-ah</i>	The main nitrogenous (nitrogen-containing) waste product in the urine
ureter <i>U-re-ter</i>	The tube that carries urine from the kidney to the bladder (root: <i>ureter/o</i>)
urethra <i>u-RE-thrah</i>	The tube that carries urine from the bladder to the outside of the body (root: <i>urethz/o</i>)

Terminology Supplementary Terms (Continued)

Simmonds disease	Hypofunction of the anterior pituitary (panhypopituitarism), usually because of an infarction; pituitary cachexia (ka-KEK-se-a)
thyroid storm	A sudden onset of thyrotoxicosis symptoms occurring in patients with hyperthyroidism who are untreated or poorly treated; may be brought on by illness or trauma, also called thyroid crisis
thyrotoxicosis thi-ro-tok-sih-KO-sis	Condition resulting from overactivity of the thyroid gland; symptoms include anxiety, irritability, weight loss, and sweating; the main example of thyrotoxicosis is Graves disease
von Recklinghausen disease REK-ing-hou-zen	Bone degeneration caused by excess production of parathyroid hormone; also called Recklinghausen disease of bone
Diagnosis and Treatment	
fasting plasma glucose (FPG)	Measurement of blood glucose after a fast of at least eight hours; a reading equal to or greater than 126 mg/dL indicates diabetes; also called fasting blood glucose (FBG) or fasting blood sugar (FBS)
free thyroxine index (FTI, T₂)	Calculation based on the amount of T ₄ present and T ₃ uptake, used to diagnose thyroid dysfunction
oral glucose tolerance test (OGTT)	Measurement of glucose levels in blood plasma after administration of a challenge dose of glucose to a fasting patient; used to measure patient's ability to metabolize glucose; a value equal to or greater than 200 mg/dL in the two-hour sample indicates diabetes
radioactive iodine uptake test (RAIU)	A test that measures thyroid uptake of radioactive iodine as an evaluation of thyroid function
radioimmunoassay (RIA)	A method of measuring very small amounts of a substance, especially hormones, in blood plasma using radioactively labeled hormones and specific antibodies
thyroid scan	Visualization of the thyroid gland after administration of radioactive iodine
thyroxine-binding globulin (TBG) test	Test that measures the main protein that binds T ₄ in the blood
transphenoidal adenectomy trans-sfe-NOY-dal ad-eh-no-MEK-to-me	Removal of a pituitary tumor through the sphenoid sinus (space in the sphenoid bone)

Go to the Audio Pronunciation Glossary in the Student Resources on [thePoint](#) to hear these terms pronounced.

Supplementary Terms list more specialized terms.

Abbreviations are listed for common terms.

Terminology Abbreviations

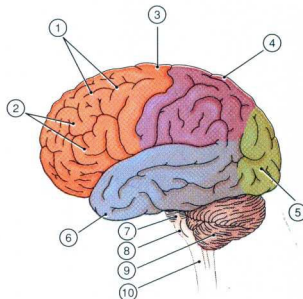
ACE	Angiotensin-converting enzyme	CHD	Coronary heart disease
AED	Automated external defibrillator	CHF	Congestive heart failure
AF	Atrial fibrillation	CK-MB	Creatine kinase MB
AMI	Acute myocardial infarction	CPR	Cardiopulmonary resuscitation
APC	Atrial premature complex	CRP	C-reactive protein
AR	Aortic regurgitation	CTA	Computed tomography angiography
ARB	Angiotensin receptor blocker	CVA	Cerebrovascular accident
AS	Aortic stenosis; arteriosclerosis	CVD	Cardiovascular disease
ASCVD	Arteriosclerotic cardiovascular disease	CVI	Chronic venous insufficiency
ASD	Atrial septal defect	CVP	Central venous pressure
ASHD	Arteriosclerotic heart disease	DOE	Dyspnea on exertion
AT	Atrial tachycardia	DVT	Deep vein thrombosis
AV	Atrioventricular	ECG (EKG)	Electrocardiogram, electrocardiography
BBB	Bundle branch block (left or right)	HDL	High-density lipoprotein
BP	Blood pressure	hs-CRP	High-sensitivity C-reactive protein (test)
bpm	Beats per minute	HTN	Hypertension
CABG	Coronary artery bypass graft	IABP	Intraaortic balloon pump
CAD	Coronary artery disease	ICD	Implantable cardioverter defibrillator
CCU	Coronary/cardiac care unit	IVCD	Intraventricular conduction delay

EXTERNAL SURFACE OF THE BRAIN

Write the name of each numbered part on the corresponding line.

Cerebellum	Parietal lobe
Frontal lobe	Pons
Gyri	Spinal cord
Medulla oblongata	Sulci
Occipital lobe	Temporal lobe

- _____
- _____
- _____
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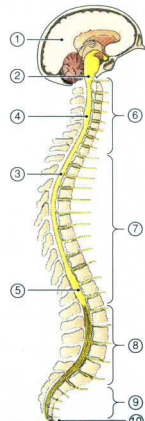


SPINAL CORD, LATERAL VIEW

Write the name of each numbered part on the corresponding line.

Brain	Lumbar enlargement
Brainstem	Lumbar nerves
Cervical enlargement	Sacral nerves
Cervical nerves	Spinal cord
Coccygeal nerve	Thoracic nerves

- _____
- _____
- _____
- _____
- _____
- _____
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Chapter Review Exercises

Chapter Review Exercises are designed to test your knowledge of the chapter material and appear at the end of each chapter.

Case Studies and Case Study Questions

Case Studies and Case Study Questions at the end of every chapter present terminology in the context of a medical report. These are an excellent review tool as they test your cumulative knowledge of medical terminology and put terminology into a real-world context.



Case Study 19-2: Osteogenesis Imperfecta

M.H., a 3-year-old boy with osteogenesis imperfecta (OI) type III, was admitted to the pediatric orthopedic hospital for treatment of yet another fracture. Since birth he has had 15 arm and leg fractures as a result of his congenital disease. This latest fracture occurred when he twisted at the hip while standing in his wheeled walker. He has been in a research study and receives a bisphosphonate infusion every two months. He is short in stature with short limbs for his age and has bowing of both legs.

M.H. was transferred to the OR and carefully lifted to the OR table by the staff. After he was anesthetized, he was positioned with gentle manipulation, and his left hip was elevated on a small gel pillow. After skin preparation and sterile draping, a stainless steel rod was inserted into the medullary canal of his left femur to reduce and stabilize the femoral fracture. The muscle, fascia, subcutaneous tissue, and skin were sutured closed. Three nurses gently held M.H. in position on a pediatric spica box while the surgeon applied a hip spica (body cast) to stabilize the fixation, protect the leg, and maintain abduction. M.H. was transferred to the post-anesthesia care unit (PACU) for recovery. The surgeon dictated the procedure as an open reduction internal

fixation (ORIF) of the left femur with intramedullary (IM) rodding and application of spica cast.



Osteogenesis imperfecta. X-ray of the upper extremity shows the thin bones and fractures that result from defective collagen production.

Case Study Questions

Multiple Choice. Select the best answer, and write the letter of your choice to the left of each number.

- | | |
|---|---|
| _____ 1. A condylectomy is
a. removal of a joint capsule
b. removal of a rounded bone protuberance
c. enlargement of a cavity
d. removal of a tumor | _____ 4. Another term for bow-legged is
a. knock-kneed
b. adduction
c. varus
d. valgus |
| _____ 2. The articular surface of a bone is located
a. under the epiphysis
b. at a joint
c. at a muscle attachment
d. at a tendon attachment | _____ 5. An IM rod is placed
a. inferior to the femoral condyle
b. into the acetabulum
c. within the medullary canal
d. lateral to the epiphyseal growth plates |
| _____ 3. The dissection directed anteroposteriorly was done
a. posterior-superior
b. circumferentially
c. front to back
d. top to bottom | |

Student Resources and thePoint

thePoint®

People learn in different ways. Some students learn best by reading. Others take in new information best by listening to their instructors. You may prefer to write down notes. When you understand the way that you process information most effectively, you can choose resources that fit your learning style. ThePoint is a practical system that lets you learn faster, remember more, and achieve success.

Getting Started with the Student Resources and thePoint

Your journey begins with your textbook, *Medical Terminology: An Illustrated Guide*, 8th edition. At many points in the textbook you will find highlighted notices that guide you to resources and activities designed for your personal learning style.

Go to the pronunciation glossary on the Student Resources to hear these words pronounced.

Inside the front cover of your textbook, you will find your personal access code. Use it to log on to thePoint—the companion website for this textbook. On the website, you can access learning activities in a variety of learning styles and choose the ones that will help you understand the material quickly and efficiently.

Visit thePoint.lww.com/CohenMedTerm8e on thePoint—the companion website for *Medical Terminology: An Illustrated Guide*, 8th edition, which will allow you to search and sort activities by learning style to choose the most effective way for you to learn the material. Resources and activities available to students include the following:

- Multiple choice, true–false, and fill-in-the-blank questions
- Categories
- Listen & Label and Look & Label
- Word Building
- Zooming In
- Pronounce It
- Spell It
- Sound It
- Hangman
- Crossword Puzzles
- Quiz Show
- Concentration
- Case Studies and Case Study Questions
- Dictionary and Audio Glossary application
- Flashcards and Flashcard Generator applications
- Animations
- Audio Drills (which allow for chapter audio files to be downloaded as MP3 files)
- Chapter Quizzes



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Resources for students:

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- Image Banks
- Animations
- Audio Glossary

Resources for instructors*:

- PowerPoints
- Lesson Plans
- Test Generator



Note: Book cannot be returned once panel is scratched off.

Log on today!

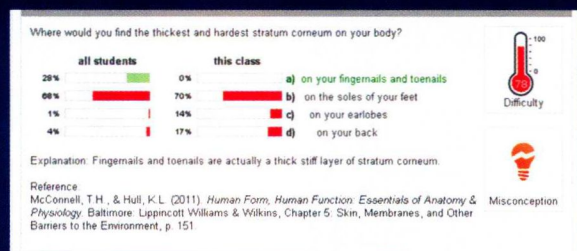
Visit <http://thePoint.lww.com> to learn more about thePoint® and the resources available. Use the scratch off code to access the student resources.

*The faculty resources are restricted to adopters of the text. Adopters have to be approved before accessing the faculty resources.

 Wolters Kluwer

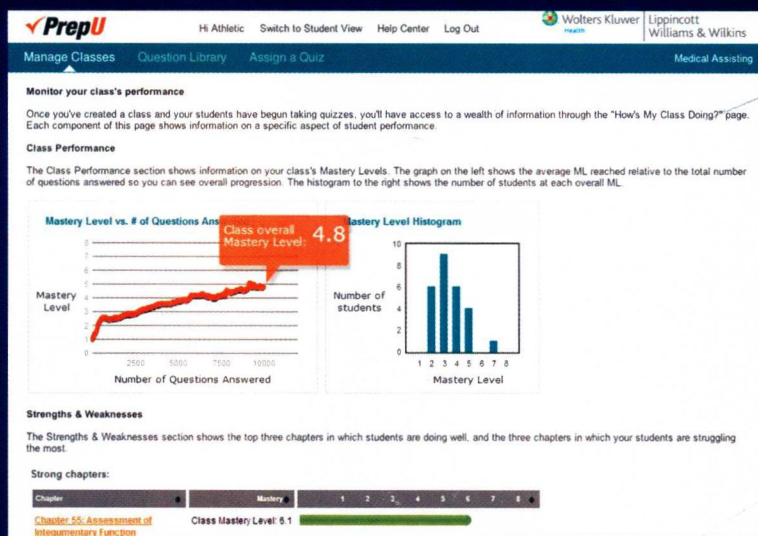
PrepU: An Integrated Adaptive Learning Solution

PrepU, Lippincott's adaptive learning system, is an integral component of *Medical Terminology: An Illustrated Guide*.



PrepU uses repetitive and adaptive quizzing to build mastery of medical terminology concepts, helping students to learn more while giving instructors the data they need to monitor each student's progress, strengths, and weaknesses. The hundreds of questions in PrepU offer students the chance to drill themselves on medical terminology and support their review and retention of the information they've

learned. Each question not only provides an explanation for the correct answer, but also references the text page for the student to review the source material. PrepU for *Medical Terminology* challenges students with questions and activities that coincide with the materials they've learned in the text and gives students a proven tool to learn medical terminology more effectively. For instructors, PrepU provides tools to identify areas and topics of student misconception; instructors can use these rich course data to assess students' learning and better target their in-class activities and discussions, while collecting data that are useful for accreditation.



A learning experience individualized to each student. An adaptive learning engine, PrepU offers questions customized for each student's level of understanding, challenging students at an appropriate pace and difficulty level, while dispelling common misconceptions. As students review and master PrepU's questions, the system automatically increases the difficulty of questions, effectively driving student understanding of medical terminology to a mastery level. PrepU not only helps students to improve their knowledge, but also helps foster their test-taking confidence.

PrepU works! PrepU works, and not just because we say so. PrepU efficacy is backed by data:

1. In an introductory nursing course at Central Carolina Technical College, student course outcomes were positively associated with PrepU usage. The students who answered the most PrepU questions in the class also had the best overall course grades.
2. In a randomized, controlled study at UCLA, students using PrepU (for biology) achieved 62 percent higher learning gains than those who did not.

To see a video explanation of PrepU, go to http://download.lww.com/wolterskluwer_vitalstream_com/mktg/prepuvid/prepupromo01.html.