

英文影印版

医学英语教程

THE LANGUAGE OF MEDICINE

· 最新修订版 ·

Davi—Ellen Chabner 主编

This edition is for sale in P.R.China, excluding Hong Kong SAR and Taiwan. Sale and purchase of this book outside of these countries is illegal and punishable by law.



ELSEVIER



北京大学医学出版社



The Language of Medicine

医学英语教程

(最新修订版)

主 编 **Davi-Ellen Chabner**

北京大学医学出版社
Peking University Medical Press

图书在版编目 (CIP) 数据

医学英语教程 : 第 11 版 = The Language of
Medicine, 11/E / (美) 达维·艾伦·钱伯纳
(Davi- Ellen Chabner) 主编. —影印本. —北京 : 北
京大学医学出版社, 2017.1
ISBN 978-7-5659-1528-4

I. ①医… II. ①达… III. ①医学—英语—教材
IV. ①R

中国版本图书馆CIP 数据核字(2016) 第 311265 号

北京市版权局著作权合同登记号 : 图字 : 01-2016-9243

ELSEVIER

Elsevier (Singapore) Pte Ltd.
3 Killiney Road, #08-01 Winsland House I, Singapore 239519
Tel: (65) 6349-0200; Fax: (65) 6733-1817

The Language of Medicine, 11/E
Copyright © 2017, Elsevier Inc. All rights reserved.
Previous editions copyrighted 2014, 2011, 2007, 2004, 2001, 1996, 1991, 1985, 1981, 1976.
ISBN-13: 978-0-323-37081-3

This adapted reprint of The Language of Medicine, 11/E by Davi- Ellen Chabner was undertaken by Peking University Medical Press and is published by arrangement with Elsevier (Singapore) Pte Ltd.

The Language of Medicine, 11/E by Davi- Ellen Chabner 由北京大学医学出版社进行改编影印, 并根据北京大学医学出版社与爱思唯尔 (新加坡) 私人有限公司的协议约定出版

ISBN: 978-7-5659-1528-4

Copyright © 2017 by Elsevier (Singapore) Pte Ltd. and Peking University Medical Press.

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or any information storage and retrieval system, without permission in writing from Elsevier (Singapore) Pte Ltd. and Peking University Medical Press. Details on how to seek permission, further information about Elsevier's permissions policies and arrangements with organizations such as the Copyright Clearance Center and the Copyright Licensing Agency, can be found at the website: www.elsevier.com/permissions.

This book and the individual contributions contained in it are protected under copyright by Elsevier (Singapore) Pte Ltd. and Peking University Medical Press (other than as may be noted herein).

Online resources are not available with this adapted reprint.

Notice

This publication has been carefully reviewed and checked to ensure that the content is as accurate and current as possible at time of publication. We would recommend, however, that the reader verify any procedures, treatments, drug dosages or legal content described in this book. Neither the author, the contributors, the copyright holder nor publisher assume any liability for injury and/or damage to persons or property arising from any error in or omission from this publication.

Published in China by Peking University Medical Press under special arrangement with Elsevier (Singapore) Pte Ltd. This edition is authorized for sale in the People's Republic of China only, excluding Hong Kong SAR, Macau SAR and Taiwan. Unauthorized export of this edition is a violation of the contract.

医学英语教程

主 编 : Davi- Ellen Chabner

出版发行 : 北京大学医学出版社

地 址 : (100191) 北京市海淀区学院路 38 号 北京大学医学部院内

电 话 : 发行部 010-82802230 ; 图书邮购 010-82802495

网 址 : [http : //www.pumppress.com.cn](http://www.pumppress.com.cn)

E - mail : booksale@bjmu.edu.cn

印 刷 : 北京强华印刷厂

经 销 : 新华书店

责任编辑 : 张凌凌 责任印制 : 李 啸

开 本 : 889 mm × 1194 mm 1/16 印张 : 66.5 字数 : 2128 千字

版 次 : 2017 年 1 月第 1 版 2017 年 1 月第 1 次印刷

书 号 : ISBN 978-7-5659-1528-4

定 价 : 269.00 元

版权所有, 违者必究

(凡属质量问题请与本社发行部联系退换)

The Language of Medicine

医学英语教程

For Catherine (“Kay”) F. Scott

With enduring gratitude for your
vision, inspiration, and encouragement
from the very beginning.



AND

To Gus, Ben, Bebe, Solomon, Amari, and Louisa

You make it all worthwhile.



Preface *

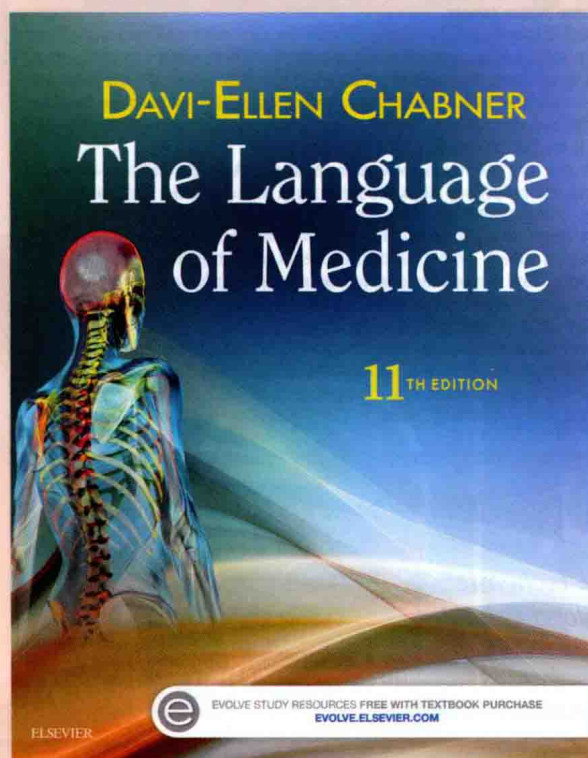
WELCOME TO THE 11TH EDITION OF THE LANGUAGE OF MEDICINE

The continuing focus of this new edition is its cutting-edge relevance to real-life medical practice. Drawing on the newest technology, state-of-the-art medical procedures, and treatments, *The Language of Medicine* brings medical terminology to life. The newly-drawn dynamic images and up-to-date photography plus compelling patient stories further illustrate medical terminology in action.

I am honored that this text continues to be the book instructors return to, year after year, because their students tell them that it works! As a student, you will find that *The Language of Medicine* speaks to you no matter what your background or level of education. It is written in simple, non-technical language that creates an exceptionally accessible pathway to learning. Since it is a workbook-text combination, you engage and interact on practically every page through writing and reviewing terms, labeling diagrams, and answering questions. Terminology is explained so that you understand medical terms in their proper context, which is the structure and function of the human body in health and disease.

Throughout the process of writing this text over its 11 editions, I have listened to hundreds of students and instructors and incorporated their insightful suggestions.

Expert medical reviewers have once again helped me to ensure that the terminology included reflects cutting edge clinical practice. New information and illustrations throughout are the result of recommendations from all those who have so generously provided feedback. My continuing goal in writing *The Language of Medicine* is to help you not only learn medical terminology but also to enjoy learning! You will find that medical terminology comes alive and stays with you when you use my interactive, logical, and easy-to-follow method. Undeniably, the study of this language requires commitment and hard work, but the benefits are great. Knowledge of medical terminology will give you a strong start in your career.



NEW TO THE 11TH EDITION

While the essential elements of *The Language of Medicine* remain in place, the new 11th edition is even more relevant to real-life medical situations.

The 11th edition includes helpful hints to point out important facts and make things clear. There are also new, first-hand stories of medical conditions and procedures. These personal accounts make medical terminology more understandable.



IN PERSON: HODGKIN LYMPHOMA

When I began noticing persistent back pain and fatigue in 2006, my doctor and I didn't take the symptoms seriously until 2007, when I noticed I was losing weight and short of breath. I saw a lung specialist, who took a chest x-ray and discovered a mass the size of a grapefruit in my mediastinum. Immediately, my stress level went sky high, and being 25 in New York City on my own (my family was in California and my mother was going through metastatic breast cancer treatment), I felt afraid and alone.

I was scheduled for a PET-CT scan and visited a friend who was a radiation oncologist. She was alarmed by my symptoms and appearance and through her father, a medical oncologist, immediately contacted with a cancer specialist. The results from the bronchoscopy with a biopsy, and a bone marrow biopsy confirmed I had Stage 2B Hodgkin lymphoma with "bulky disease" (a large mass) in my mediastinum. This diagnosis was really scary, watching my mother go through her difficult battle with cancer made me realize that if I emulated her positive attitude, life would be easier for my entire family.

The treatment was six cycles of chemotherapy. After two cycles, I shaved my head. A Powerport was installed in my upper arm to make it more quickly and with less pain. Because I was so young, I wanted to preserve my fertility.

Three months into my treatment a PET-CT showed that I would need radiation to my chest after the chemotherapy. I was having a difficult time coping with the treatment. Nevertheless, I rallied and traveled to Boston for 4 weeks to receive this cutting-edge treatment, despite the cost.

My radiation treatment ended in 2008, and a follow-up treatment. I remember when the doctor told me that the scan was clear and I cried on a bench for an hour. More recently, I've been relieved when the scan is clear, but I am also afraid of developing a secondary cancer as a result of the extensive radiation. In 2013, I've been getting regular mammograms, and because I'm taking thyroid hormone to treat hypothyroidism.

I know that my Hodgkin lymphoma experience will always be a part of my attitude, which has enabled and empowered me to start a new chapter in my life.

Lenore Estrada is the CEO and Co-Founder of Three Rivers, a company dedicated to bringing awareness to the economic, social, and environmental issues facing our communities. She is also the President of the Board of Directors.



IN PERSON: PROPHYLACTIC MASTECTOMY

This first-person narrative describes a woman who elected to undergo prophylactic mastectomy.

Whenever May rolls around I think about my surgery and the decision I made many years ago to have prophylactic mastectomies. I grew up in a family of strong women. They were determined to work, play sports, and raise their families, except they all had breast cancer. It was a bump in the road for each one of them and, at age 36, I had 4 children, a wonderful career and a husband and abnormal mammograms. I had friends, holidays, and biopsies, and being a physician (radiation oncologist) and the daughter of a medical oncologist, I was worried about my own health.

When my mother tested negative for the BRCA gene, it did not relieve my anxiety. It just intensified it. What was causing the breast cancer in my family? Genetic counselors explained that only about 15% of breast cancer can be attributed to the BRCA genes; the rest are caused by other "faulty genes" or just changes in the breast cells.

I heard about a new procedure that physicians were pioneering—direct-to-implant breast reconstruction after mastectomy. One step and one surgery would drop my risk from 40% to close to 2% or 3%. I could preserve my anatomy and get rid of those breast cells that might kill me someday. It had a lot to do with my family and career. I did not want to have breast cancer.

So I decided, after much research and discussion, to have prophylactic mastectomies with reconstruction. On a Tuesday in the first week of May 2006, I had my surgery. My mother was there when I woke up from anesthesia, and I have never seen her so relieved. My husband took care of the kids, closed the car doors for me, and took over mowing the lawn for a while. I didn't discuss my surgery, especially not with the freedom that Angelina Jolie did in 2013. In 2006, no one had heard of my surgery; they couldn't even pronounce the name of it. But I was convinced that it meant I might very well "dodge a bullet."

Nine years later, I smile when I see morning television shows talk about the "Angelina Effect"—implants and breast reconstruction, nipples, and risk reduction, all in the same story. It's wonderful that women can talk about their "faulty parts" without feeling shame. It's a great example for our daughters as well.

In March of 2015, Angelina wrote another op-ed discussing her oophorectomy and salpingectomy surgery (removal of both ovaries and both fallopian tubes). Women with BRCA genes have an increased risk not only for breast cancer but also for ovarian cancer. And this was the disease that took Angelina's mother's life. Ovarian cancer, unlike breast cancer, is often diagnosed at a very late stage. A majority of breast cancers are diagnosed at stage 1 or 2 or even at a "pre-cancer" DCIS [ductal carcinoma in situ] stage. Ovarian cancer, on the other hand, often is diagnosed after the cancer has already spread. Angelina also discussed another "taboo" subject: Removing ovaries and the fallopian tubes in a premenopausal woman (Angelina was 39 years old at the time of her surgery) sends her into early menopause. Hot flashes, skin changes, dryness (you know where) are hard topics to discuss in public. She put it out there, front and center, to destigmatize the subject for all women.



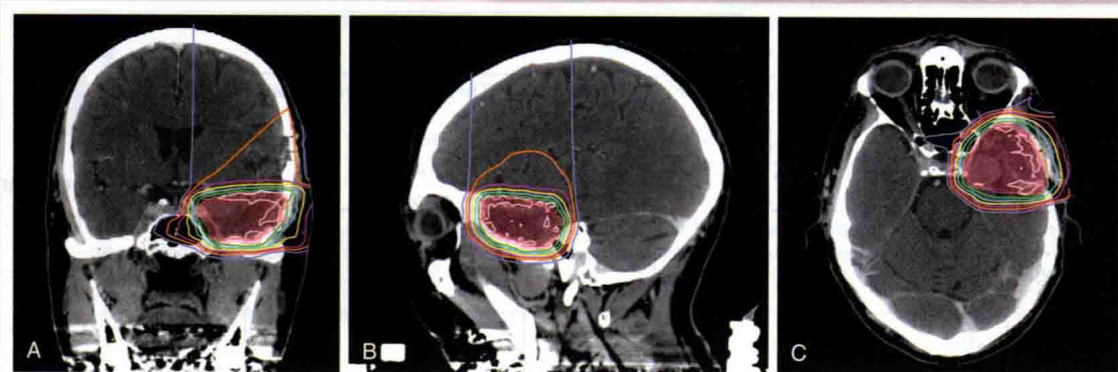
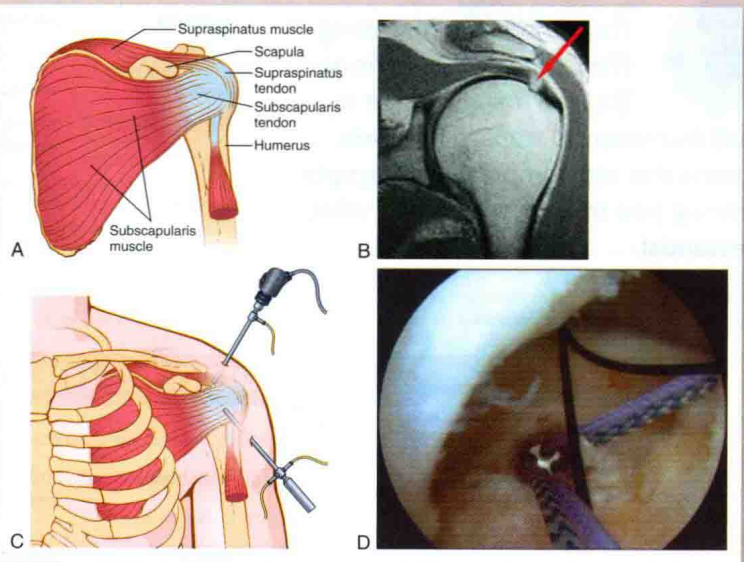
*** HINT:** Don't confuse *pleural* with *plural*, which means more than one!

*** HINT:** You may be familiar with a **TIA (transient ischemic attack)**, which is a "**mini-stroke**" that occurs when blood is held back from tissue in the brain.

*** HINT:** The extra *n* in *-thyronine* (pronounced THĪ-rō-nēn) avoids the combination of two vowels (o and i).

New *** HINTS** make things clear and point out important facts.

New clinical photographs and drawings dynamically illustrate medical terminology, conditions, and treatments.



HOW TO USE THE BOOK

The Language of Medicine makes learning easy. The book guides and coaches you step by step through the learning experience. Don't get overwhelmed! Approach learning systematically, step by step. I've helped you study each chapter by organizing the information in small pieces. Icons are provided to help you navigate the sections of the text.



VOCABULARY

The following list reviews many of the terms introduced in this chapter. Short definitions and additional information reinforce your understanding of the terms. All of the terms are included in the *Pronunciation of Terms* section later in the chapter.

absorption	Passage of materials through the walls of the small intestine into the bloodstream.
amino acids	Small building blocks of proteins (like links in a chain), released when proteins are digested.
amylase	Enzyme (-ase) secreted by the pancreas and salivary glands to digest starch (amyl/o).
anus	Terminal end or opening of the digestive tract to the outside of the body.
appendix	Blind pouch hanging from the cecum (in the right lower quadrant [RLQ]). It literally means hanging (pend/o) onto (ap-, which is a form of ad-).
bile	Digestive juice made in the liver (emulsifies) large fat globuli <i>bilis</i> , meaning gall or anger), composed of bile pigments (col salts).



After basic material in the chapter is introduced, the key terms you need to learn are presented in Vocabulary lists. These lists help you study and stay focused.



You cannot get lost using *The Language of Medicine*.

You learn and engage in small incremental steps. The book imparts the most important concepts, allowing you to concentrate on what is essential.



TERMINOLOGY

Write the meanings of the medical terms in the spaces provided.

COMBINING FORMS

COMBINING FORM	MEANING	TERMINOLOGY	MEANING
adenoid/o	adenoids	adenoidectomy _____	
		adenoid hypertrophy _____	
alveol/o	alveolus, air sac	alveolar _____	
bronch/o bronchi/o	bronchial tube, bronchus	bronchospasm _____	
		<i>This tightening of the bronchus is a chief characteristic of asthma and bronchitis.</i>	
		bronchiectasis _____	
		<i>Caused by weakening of the bronchial wall from infection.</i>	
		bronchodilator _____	
		<i>This drug causes dilation, or enlargement, of the opening of a bronchus to improve ventilation to the lungs. An example is albuterol, delivered via an inhaler.</i>	
		bronchopleural _____	
		<i>A bronchopleural fistula is an abnormal connection between the bronchial tube and the pleural cavity (space). Occurring as a result of lung disease or surgical complication, this can cause an air leak into the pleural space.</i>	
bronchiol/o	bronchiole, small bronchus	bronchiolitis _____	
		<i>This is an acute viral infection occurring in infants younger than 18 months of age.</i>	
capn/o	carbon dioxide	hypercapnia _____	



Anabolic Steroids

These drugs are similar to androgens (male hormones) in their effects on the body. They build up protein within cells.



Metabolism and the Thyroid Gland

The thyroid gland secretes thyroid hormone (thyroxine, or T₄), which stimulates metabolism in cells. Increased levels of hormone speed up metabolism (increased energy and weight loss) and decreased levels of hormone slow down metabolism (sluggishness and weight gain).



Epinephrine and Adrenaline

These are the SAME hormone! Two different names for the same substance secreted by the adrenal glands (above the kidneys).



Throughout the text, Spotlights enhance the relevance of medical terms.



PRACTICAL APPLICATIONS

CASE STUDY: A PATIENT'S ACCOUNT OF ULNAR NERVE NEUROPATHY

I am definitely not one of those ambidextrous people. I am a true righty, so the "experiment" of making me a lefty out of necessity didn't go so well. Over the past decade, I had slowly lost sensation in my right pinky, and a fair amount of function, in my right hand. You might think that I should have taken care of treating it when it initially presented itself with an electric shock down my arm from hitting my "funny

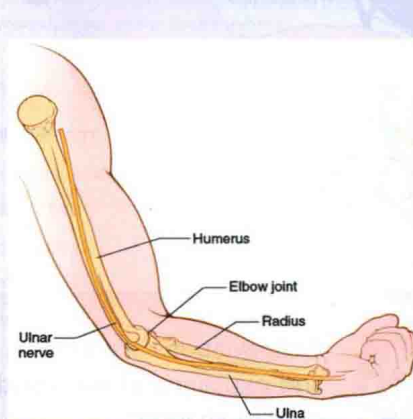


FIGURE 10-25 Pathway of ulnar nerve running behind the elbow joint (medial epicondyle of the humerus) and toward the hand.



FIGURE 10-26 Surgical approach for ulnar nerve repair.

During an exam by an orthopedic elbow specialist, testing right hand muscles. My grip strength was also affected and then my right.

Surgery was scheduled immediately with hopes of halting sensation in my pinky. My surgeon performed an Eaton procedure, placing sutures to hold the ulnar nerve in its new place under the elbow. He created a little "curtain" with the fascia to keep the nerve away from the bony prominence of the elbow.

When I awoke from the anesthesia, I could immediately feel my hand. I had tingling in my previously numb fingers and so on my palm. These findings demonstrated the return of the aut



Medical terminology is connected

to real life with case reports and case studies throughout the text and on the companion Evolve website.



PRACTICAL APPLICATIONS

CASE STUDY: TARGETED THERAPY FOR LUNG CANCER

In 2008, Sarah Broom was a 35-year-old literature instructor and poet living in New Zealand. Married with two young sons, she was pregnant with her third child when she noticed shortness of breath accompanied by a persistent cough. An x-ray of her lungs during her 7th month of pregnancy showed a large mass in

one lung. After a cesarean section (her daughter was born safely), she had a biopsy and other tests, which revealed advanced lung cancer. Sarah was a nonsmoker.

The doctors in New Zealand told her that her care would be palliative and that she had only a few months to live.

Sarah was desperate to explore every option, and through a personal connection, she sent her biopsy slides to the MGH Cancer Center in Boston. The slides were analyzed using cutting edge technology, and her tumor was found to have a mutation called EML4-ALK, which occurs in only 5% of lung cancers. The doctors at MGH knew of a new drug called crizotinib that was being evaluated to treat lung cancers with this specific mutation. Finding a specific mutation in a tumor and targeting that mutation with particular drug is a cutting edge approach to cancer treatment.

Sarah was given the new drug—and her tumors shrunk! She was in remission for over 2 years. In 2010, the tumors returned, and Sarah traveled back to Boston for further drug treatment, which was not successful. She developed brain metastases.

Her doctors in Boston knew of one more targeted therapy drug called ceritinib that was still in clinical trials and therefore would not be available for patients. However, through coordinated and persistent efforts, the pharmaceutical company allowed her advance, compassionate access to the drug, and it worked for 2 years! Because it was seen that this drug was effective against lung cancer in patients with relapsed



Study sections organize information and help you learn.



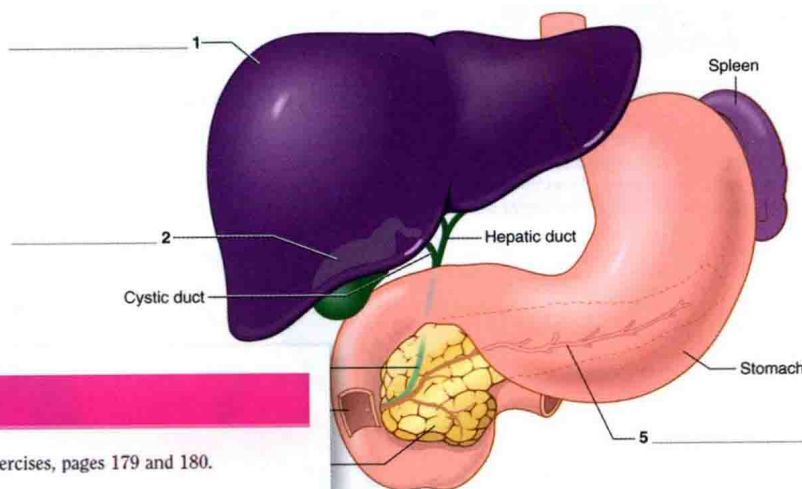
STUDY SECTION 5

Practice spelling each term, and know its meaning.

anterior (ventral)	Front surface of the body.
deep	Away from the surface.
distal	Far from the point of attachment to the trunk or far from the beginning of a structure.
frontal (coronal) plane	Vertical plane dividing the body or structure into anterior and posterior portions.
inferior (caudal)	Below another structure; pertaining to the tail or lower portion of the body.
lateral	Pertaining to the side.
medial	Pertaining to the middle or near the medial plane of the body.
posterior (dorsal)	Back surface of the body.
prone	Lying on the belly (face down, palms down).
proximal	Near the point of attachment to the trunk or near the beginning of a structure.
sagittal (lateral) plane	Lengthwise, vertical plane dividing the body or structure into right and left sides. From the Latin <i>sagitta</i> , meaning arrow. As an arrow is shot from a bow it enters the body in the sagittal plane, dividing right from left. The midsagittal plane divides the body into right and left halves.
superficial	On the surface.
superior (cephalic)	Above another structure; pertaining to the head.
supine	Lying on the back (face up, palms up).
transverse (axial) plane	Horizontal (cross-sectional) plane dividing the body into upper and lower portions.



As you study with *The Language of Medicine*, you are engaged in each step of the learning process. On nearly every page, you are actively involved in labeling diagrams, dividing words into component parts, writing meanings to terms, testing, reviewing, and evaluating your learning.



Abbreviations are listed and explained in each body system chapter.



EXERCISES

Remember to check your answers carefully with the Answers to Exercises, pages 179 and 180.

A Match the listed digestive system structures with the meanings that follow.

anus	esophagus	liver
cecum	gallbladder	pancreas
colon	ileum	pharynx
duodenum	jejunum	sigmoid colon

- consists of ascending, transverse, descending, and sigmoid sections _____
- small sac under the liver; stores bile _____
- first part of the large intestine _____
- end of the digestive tract opening to the outside of _____
- second part of the small intestine _____
- tube connecting the throat to the stomach _____
- third part of the small intestine _____
- large organ in the RUQ; secretes bile, stores sugar, _____
- throat _____
- lowest part of the colon _____
- first part of the small intestine _____
- organ under the stomach; produces insulin and dia _____



ABBREVIATIONS

AC	acromioclavicular (joint)	NSAID	nonsteroidal anti-inflammatory drug—often prescribed to treat musculoskeletal disorders
ACL	anterior cruciate ligament of the knee	OA	osteoarthritis
ANA	antinuclear antibody—indicator of systemic lupus erythematosus	ORIF	open reduction (of fracture)/internal fixation
BKA	below-knee amputation	ortho	orthopedics (or orthopaedics)
BMD	bone mineral density	OT	occupational therapy—helps patients with impaired musculoskeletal function perform activities of daily work-
C1 to C7	cervical vertebrae		
Ca	calcium		



A Review Sheet at the end of each

chapter helps you organize and test yourself on what you have learned!



REVIEW SHEET

This Review Sheet and the others that follow each chapter are complete lists of the word elements contained in the chapter. They are designed to pull together the terminology and to reinforce your learning by giving you the opportunity to write the meanings of each word part in the spaces provided and to **test yourself**. Check your answers with the information in the chapter or in the Glossary (Medical Word Parts—English), at the end of the book. It's a good idea to tab the Glossary so that you can easily locate it.

Combining Forms

COMBINING FORM	MEANING	COMBINING FORM	MEANING
aden/o	_____	hem/o, hemat/o	_____
arthr/o	_____	hepat/o	_____
bi/o	_____	iatr/o	_____
carcin/o	_____	leuk/o	_____
cardi/o	_____	log/o	_____
cephal/o	_____	nephro/o	_____
cerebr/o	_____	neur/o	_____
cis/o	_____	onc/o	_____
crin/o	_____	ophthalm/o	_____
cyst/o	_____	oste/o	_____
cyt/o	_____	path/o	_____
derm/o, dermat/o	_____	ped/o	_____
electr/o	_____	psych/o	_____
encephal/o	_____	radi/o	_____
enter/o	_____	ren/o	_____



PRONUNCIATION OF TERMS

To test your understanding of the terminology in this chapter, write the meaning of each term in the space provided. In addition, you may wish to cover the terms and write them by looking at your definitions. Make sure your spelling is correct. The CAPITAL letters indicate the accented syllable. The page number after each term indicates where it is defined or used in the book, so you can easily check your responses. You will find complete definitions for all of these terms and their audio pronunciations on the Evolve website.

Pronunciation Guide

ā as in āpe	ā as in āpple
ē as in ēven	ē as in ēvery
ī as in īce	ī as in īnterest
ō as in ōpen	ō as in pōt
ū as in ūnit	ū as in ūnder

TERM	PRONUNCIATION	MEANING
abdomen (47)	ĀB-dō-mēn	_____
abdominal cavity (47)	āb-DŌM-i-nāl KĀ-vī-tē	_____
adipose (41)	ĀD-ī-pōs	_____
anabolism (37)	ā-NĀB-ō-līzm	_____
anterior (52)	an-TĒ-rē-ōr	_____
cartilage (41)	KĀR-tī-līj	_____
catabolism (37)	kā-TĀB-ō-līzm	_____
caudal (52)	KĀW-dāl	_____
cell membrane (37)	sēl MĒM-brān	_____
cephalic (52)	SĒF-ā-līk	_____
cervical (51)	SĒR-vī-kāl	_____
chondroma (56)	kōn-DRŌ-mā	_____
chondrosarcoma (56)	kōn-drō-sār-KŌ-mā	_____
chromosome (37)	KRŌ-mō-sōm	_____



The Pronunciation of Terms section shows you how to pronounce each

new term in the chapter and gives you the chance to practice writing its meaning. You can also hear these terms pronounced on the companion Evolve website. The answers to the Pronunciation of Terms section are found on the Evolve website as well.

ALSO AVAILABLE

evolve STUDENT EVOLVE RESOURCES (COMPLIMENTARY ACCESS INCLUDED WITH PURCHASE OF THIS TEXT)

All student resources are now available online on the Evolve website. The student website accompanying this new edition is packed with activities, games, additional information, and video clips to expand your understanding and test your knowledge. Chapter by chapter you will find quizzes, case studies, examples of medical records, and a wealth of images to illustrate terminology. Additionally, on the website, you can hear the terms corresponding to the Pronunciation of Terms section in each chapter (more than 3,000 terms in all). Access your resources at: <http://evolve.elsevier.com/Chabner/language>.

New to the Student Evolve Website for the 11th Edition

- Updated interface enabling convenient online access to your resources.
- The Mobile Dictionary has been updated for this edition. Access this complimentary resource from the Evolve site on your desktop or mobile device and have easy access to definitions of all terms found in the text. This resource helps you study each chapter and also will be a reference for you in the workplace. Each definition has been crafted carefully to explain terms using plain, nontechnical language.
- The Quick Quiz feature has also been revised, enabling students to get a snapshot assessment of their knowledge of a chapter's content.



iTerms Study Companion (for sale separately)

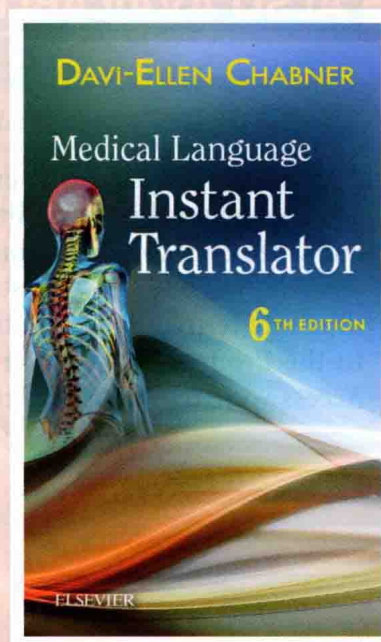
- The iTerms audio study guide provides pronunciation and enables you to hear each term pronounced with its definition, in a portable format. This audio companion is available for download. Also included are short review quizzes and coaching tips to help you make the most of your study.
- The iTerms Study Companion, Mobile Dictionary, Quick Quizzes, and updated Flash Cards have been optimized for use on mobile devices, providing convenient access for on-the-go studying.



MEDICAL LANGUAGE INSTANT TRANSLATOR (for sale separately)

The *Medical Language Instant Translator* is a uniquely useful resource for all allied health professionals and students of medical terminology. It is a pocket-sized medical terminology reference with convenient information at your fingertips!

- NEW updates to correlate with the revision of *The Language of Medicine*



INSTRUCTOR'S RESOURCE MANUAL

The *Language of Medicine Instructor's Resource Manual* (includes instructor's manual, ExamView test bank, PowerPoints, and an image collection) is available with even more new quizzes, teaching suggestions, crossword puzzles, medical reports, and reference material. The image collection contains all figures and photos from the 11th edition. The instructor materials plus a test bank can be accessed online at <http://evolve.elsevier.com/Chabner/language>.

The fundamental features you have come to trust in learning and teaching medical terminology remain strong in this new edition. These are:

- Simple, nontechnical explanations of medical terms.
- Workbook format with ample space to write answers.
- Explanations of clinical procedures, laboratory tests, and abbreviations related to each body system.
- Pronunciation of Terms sections with phonetic spellings and spaces to write meanings of terms.
- Practical Applications sections with case reports, operative and diagnostic tests, and laboratory and x-ray reports.
- Exercises that test your understanding of terminology as you work through the text step by step (answers are included).
- Review Sheets that pull together terminology to help you study.
- Comprehensive glossaries and appendices for reference in class and on the job.

Each student and teacher who selects *The Language of Medicine* becomes my partner in the exciting adventure of learning medical terms. Continuity is crucial. Continue to communicate with me through email (daviellenchabner@gmail.com) with your suggestions and comments so that future printings and editions may benefit. A website connected to *The Language of Medicine* and dedicated to helping students and teachers is located at <http://evolve.elsevier.com/Chabner/language>. I hope you will tell me about additional resources you would like to see on that website so that we can make it an even more useful part of the learning process. You should know that I still experience the thrill and joy of teaching new students. I love being in a classroom and feel privileged to continue to write this text. I hope that my enthusiasm and passion for the medical language are transmitted to you through these pages.

Work hard, but have fun with
The Language of Medicine!



DAVI-ELLEN CHABNER



Acknowledgments

Maureen Pfeifer has been my extraordinary and indispensable editorial partner for the last 18 years. Her phenomenal expertise in all facets of communication, coordination, production, editing, updating, and management is amazing. She has the unique ability to “make things happen” and “make things right.” Both personally and professionally, I am grateful for her unique insight and capabilities. She is intelligent, calm, and upbeat in the face of any issue affecting *The Language of Medicine* and its ancillaries. Most of all, I rely on her loyalty and her confidence that we are creating an eminently useful and valuable textbook and resource for both students and instructors. Thank you, Maureen, for everything you do for me, especially when you take things “off my plate.”

Bruce A. Chabner, MD, and Elizabeth Chabner Thompson, MD, MPH, continue to be amazing resources to me for expert and up-to-date medical advice. Their contributions were essential in reviewing and editing all chapters and glossaries. My devoted friend, Dan Longo, MD, never turned me down for valuable medical advice and editing of chapters. He was also a wonderful resource for helping identify expert reviewers.

For many editions of this and my other books, Elizabeth Galbraith has copyedited and proofread the manuscript with her characteristic expert attention to grammatical detail and medical accuracy. Thanks to her, students will read and study the text with greater ease.

Jim Perkins, Assistant Professor of Medical Illustration, Rochester Institute of Technology, has been associated with *The Language of Medicine* since its 6th edition. He has worked with me to create drawings that are not only attractive but also essential in making the terminology more understandable. I have come to rely on his unique talent for clarity, accuracy, and detail.

I am indebted to the many medical reviewers listed on pages xv-xvi who offered essential advice and comments on specific chapters. Their insights and expertise make this 11th edition reflect what is current, accurate, and cutting edge in medicine today.

The classroom instructors listed on pages xvi-xvii extensively and carefully reviewed the text, and I have listened to their comments, which are integrated into this new edition. Many other instructors contacted me personally through email with helpful suggestions. Special thank you to Robert Boyd, Martha J. Payne, Heather LaJoie, and Dorothy Price.

I am always pleased to hear from students who comment on the book and ask important questions. I try to answer each as quickly and accurately as possible. Thanks to Jennifer Trup, Michelle Sabri, Hannah Hickerson, Winnie Mei, Anna Spiro, Elizabeth Ramirez, Jared Rodriguez, Al-Yasha Andersen, and Sam Brondfield.

The In Person stories throughout the text are first-hand personal accounts of individuals dealing with illness and medical procedures. The writers of these stories are extraordinarily generous to share their insights and reactions so that we all benefit. A very special thank you to: Stan Ber, Nancy J. Brandwein, Mary Braun, Bruce A. Chabner, Lenore Estrada, Sidra DeKoven Ezrahi, Elizabeth F. Fideler, Tanzie Johnson, Kevin Mahoney,

Frank McGinnis, Brenda Melson, John Melson, Laura Claridge Oppenheimer, Carolyn Peter, Bob Rowe, Ruthellen Sheldon, Elizabeth Chabner Thompson, and Cathy Ward.

The superb staff at Elsevier Health Sciences continues to be vital to the success of *The Language of Medicine*. Luke Held, Content Development Manager, was always responsive, available, and effective in managing the many details of the project. Diane Chatman, Senior Content Development Specialist, coordinated countless facets of this edition. I appreciate Linda Woodard, Senior Content Strategist, and Jeanne Olson, Director of PSE & Professional Reference, for their expert management and their steadfast support of my books.

I am grateful to Michelle Harness, Director, Book Production, Gayle May, Book Production Manager, and Julie Eddy, Publishing Services Manager, for their superb production efforts. Celeste Clingan, Book Production Specialist, tirelessly and effectively handled the day-to-day aspects of the production process. Thank you, Celeste! Brian Salisbury created the design for this edition. I appreciate his expertise and responsiveness.

I continue to be impressed by the talents of the entire marketing team, especially Bianca Janosevic, Senior Vice President, Trade/Digital Channels, Julie Burchett, Director of Product Solutions Marketing, and Traci Cahill, Associate Marketing Manager, Nursing and Health Professions Marketing. They do a phenomenal job keeping *The Language of Medicine* in-step with the needs of instructors and students.

Thanks to Joe Gramlich, Multimedia Producer and Jeanne Crook, Team Manager, Multimedia, for their work on the electronic products associated with this new edition.

A very special note of gratitude to the extraordinary and devoted sales team at Elsevier Health Sciences, which is beyond compare! Led by Jerry Pianto, Senior Vice President of Sales, and Linda Morris, Director of Sales Operations, Nursing and Health Professions, they work tirelessly to bring my books and learning system to the marketplace. You are the best!

My family and friends continue to be my greatest comfort and support. The kids, Brandon, Marla, Noonie, and Dave, are always “in my corner.” The grandkids, Bebe, Solomon, Ben, Gus, Louisa, and Amari make me feel “on top of the world.” Juliana DoCarmo, by managing so many day-to-day responsibilities, allows me the luxury of being able to work and concentrate. Bruce, my husband of 52 years, has always encouraged my passion for teaching and writing, and given me the space and time to enjoy it. His calm and reassurance trumps any doubt or angst. Lastly, our canine kids, Greta and Owen, remain the love of our lives, providing countless hours of relaxation.



Reviewers

The following persons reviewed the text and/or the ancillaries:

MEDICAL REVIEWERS

Elizabeth Chabner Thompson, MD, MPH

CEO/Founder of BFFL Co
Scarsdale, New York

Bruce A. Chabner, MD

Director of Clinical Research
Massachusetts General Hospital Cancer Center
Professor of Medicine
Harvard Medical School
Boston, Massachusetts

Michael J. Curtin, MD

Medical Director, St. Luke's Sports Medicine
Orthopedic Surgery and Sports Medicine
St. Luke's Clinic
Boise, Idaho

Michael F. Greene, MD

Professor of Obstetrics, Gynecology, and
Reproductive Biology
Harvard Medical School
Vincent Department of Obstetrics and Gynecology
Massachusetts General Hospital
Boston, Massachusetts

Thomas K. Fehring, MD

Co-Director Orthocare Hip and Knee Center
Charlotte, North Carolina

Morris A. Fisher, M.D.

Attending Neurologist
Edward Hines Jr. Veterans Hospital
Hines, Illinois
Professor of Neurology Loyola University
Chicago Stritch School of Medicine
Maywood, Illinois

Lipika Goyal, MD, MPhil

Instructor, Internal Medicine
Harvard Medical School
Boston, Massachusetts

Carlos A. Jamis-Dow, M.D.

Associate Professor of Radiology
Penn State
Milton S. Hershey Medical Center
Hershey, Pennsylvania

Jay Loeffler, MD

Chief of Radiation Oncology
Massachusetts General Hospital Cancer Center
Herman and Joan Suit Professor
Harvard Medical School
Boston, Massachusetts

Dan L. Longo, MD

Deputy Editor
New England Journal of Medicine
Professor of Medicine
Harvard Medical School
Boston, Massachusetts

Ann Sacher, MD

Scarsdale, New York

Henry E. Schniewind, MD

Boston, Massachusetts

Noëlle S. Sherber, MD, FAAD

Dermatologist
Co-Founder, Sherber+Rad
Washington, DC

Leigh H. Simmons, MD

Assistant Professor of Medicine
Harvard Medical School
Division of General Internal Medicine
Massachusetts General Hospital
Boston, Massachusetts