

MEDICAL TERMINOLOGY

FOR HEALTH PROFESSIONS

7th
EDITION



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Ann Ehrlich
Carol L. Schroeder



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***Medical Terminology for Health Professions,
Seventh Edition***

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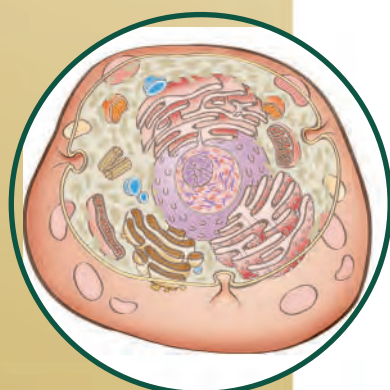
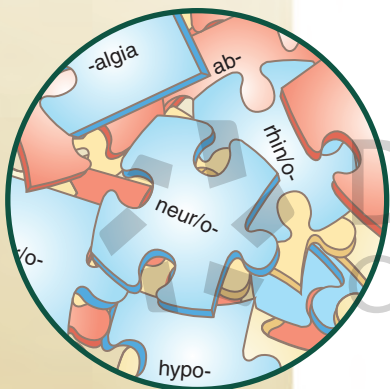
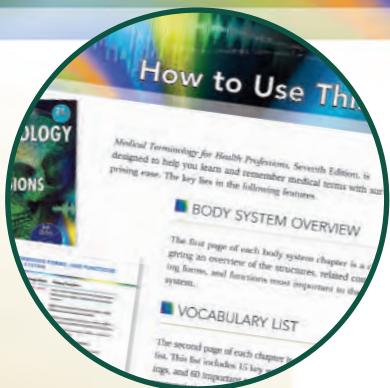
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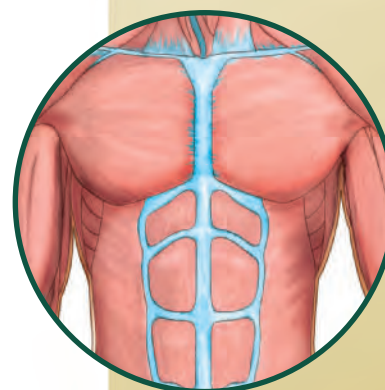
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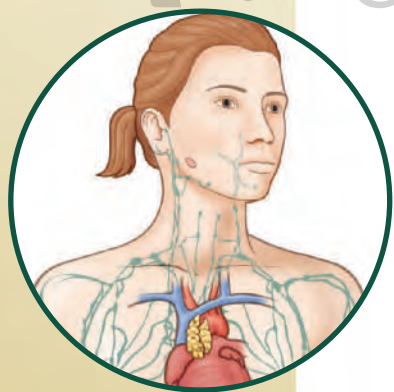
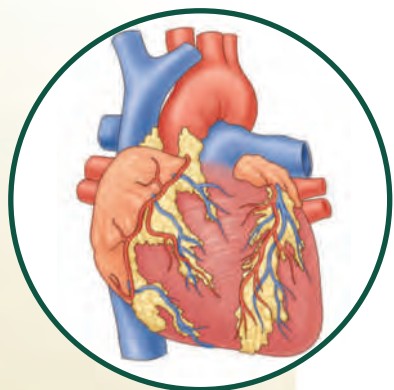
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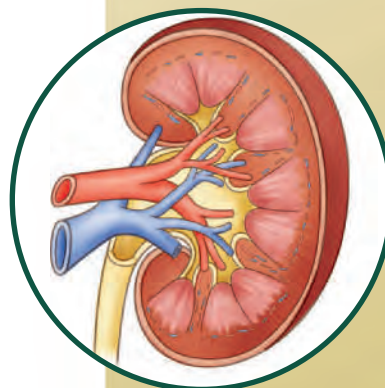
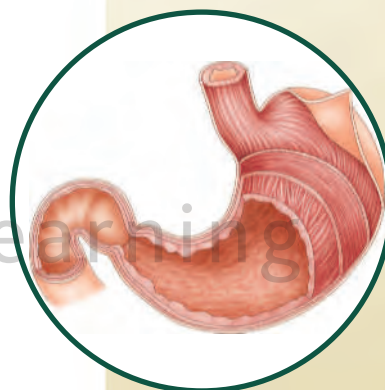
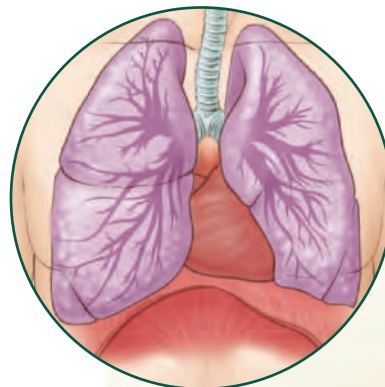
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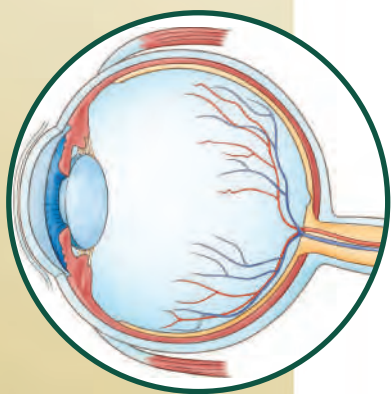
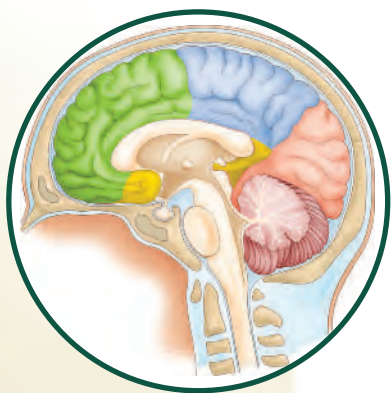
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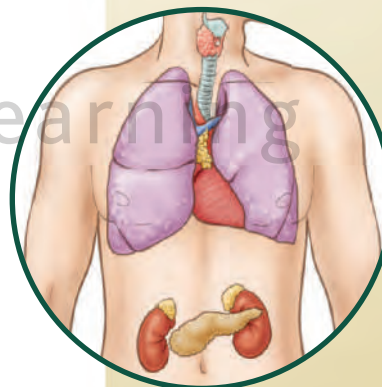
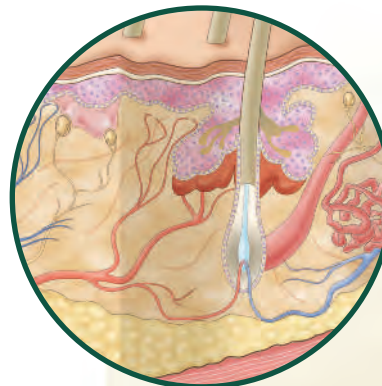
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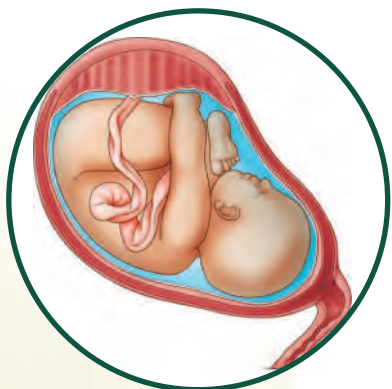
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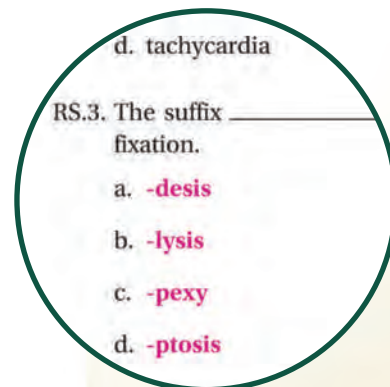
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■ TO THE LEARNER

Welcome to the world of medical terminology! Learning this special language is an important step in preparing for your career as a healthcare professional. Here's good news: Learning medical terms is much easier than learning a foreign language because you are already familiar with quite a few of the words, such as *appendicitis* and *tonsillectomy*. Understanding new words becomes easier with the discovery that many of these terms are made up of interchangeable word parts that are used in different combinations. Once you understand this, you'll be well on your way to translating even the most difficult medical terms, including words you have never seen before. You'll be amazed to see how quickly your vocabulary will grow!

This book and the accompanying learning materials are designed to make the process as simple as possible. Review the introductory sections at the beginning of the book, including "How to Use This Book" and "How to Use StudyWARE™" so you can find your way around easily. Once you become comfortable with the format, you'll discover you are learning faster than you ever imagined possible.

CHAPTER ORGANIZATION

The text is designed to help you master medical terminology. It is organized into 15 chapters, the Word Part Review, the Comprehensive Medical Terminology Review, three appendices, an index, and removable Flashcards. To gain the most benefit from your use of this text, take advantage of the many features, including the "Learning Exercises" plus the "Human Touch" stories and discussion that are included at the end of each chapter.

Primary terms are the most important terms in a chapter. When first introduced, the term appears in boldface and, if appropriate, is followed by the "sounds-like pronunciation." Only primary terms are used as correct answers in the exercises and tests.

Secondary terms appear in *orange* italics. These terms, which are included to clarify the meaning of a primary term, are sometimes used as distracters, but not as correct answers, in exercises or tests.

Each chapter begins with a **vocabulary list** consisting of 15 word parts and 60 medical terms selected from among the primary terms in the chapter. These important words are pronounced in the StudyWARE™, as well as on the optional Audio CDs. Note: if your instructor is using the **Simplified Syllabus** version of this course, these are the terms that you will be expected to learn for all quizzes, tests, and exams.

Introductory Chapters and Word Part Review

Chapters 1 and 2 create the foundation that enables you to master the rest of the book. Chapter 1 introduces key word parts—the building blocks of most medical terms.

Chapter 2 introduces more word parts and provides an overview of basic terms used throughout the health field.

After studying these chapters, complete the **Word Part Review** that follows Chapter 2. These practice activities and the accompanying test will help you determine whether you've mastered the concept of these all-important building blocks. If you are having trouble here, it is important to put more effort into learning these basics.

Body System Chapters

Chapters 3 through 14 are organized by body system. Because each body system stands alone, you can study these chapters in any sequence. Each chapter begins with an overview of the structures and functions of that system so you can relate these to the specialists, pathology, diagnostics, and treatment procedures that follow.

Chapter 15 introduces basic diagnostic procedures, examination positions, imaging techniques, laboratory tests, nuclear medicine, and pharmacology. It also includes a section on alternative and complementary medicines. This chapter can be studied at any point in the course.

Comprehensive Medical Terminology Review

This section, which follows Chapter 15, is designed to help you prepare for your final examination. It includes study tips, practice exercises, and a simulated final test; however, be aware that none of these questions are from the actual final test.

Appendices

Appendix A: Prefixes, Combining Forms, and Suffixes is a convenient alphabetic reference for medical word parts. When you don't recognize a word part, you can look it up here.

Appendix B: Abbreviations and Their Meanings is an extensive list of commonly used abbreviations and their meanings. Abbreviations are important in medicine, and using them *accurately* is essential!

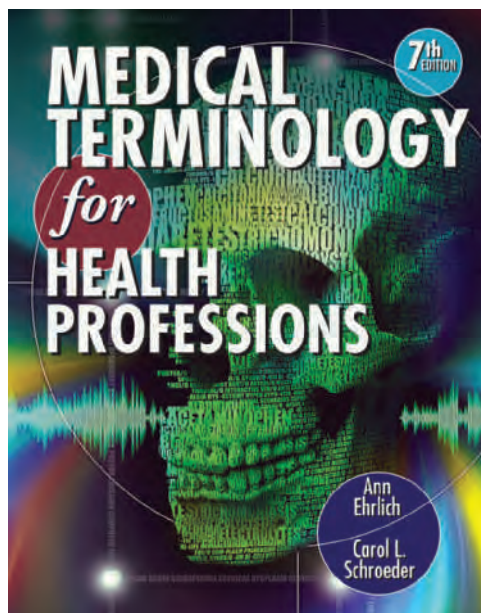
Appendix C: Glossary of Pathology and Procedures gives the definitions of all the primary terms in the text relating to diagnosis, pathology, and medical procedures.

LEARNING SUPPLEMENTS

The following supplements are included with your textbook to provide even more help as you study.

- **Flashcards.** Improve your knowledge and test your mastery by using the flashcards provided in the last section of the book. Remove these perforated pages carefully and then separate the cards. Flashcards are an effective study aid for use even when you have only a small amount of time.





■ **StudyWARE™**. This interactive software packaged with the book, and available online, offers an exciting way to gain additional practice (while having fun) through exercises, game activities, and audio elements for each chapter. See “How to Use the StudyWare” on page xxv for details.

The students who have used [StudyWARE™] show a significant lead in learning, retaining and understanding terminology as evidenced by 85% or greater on term tests and 80% or higher on the final spelling and terminology competencies. These students also are better documenters of patient treatment than those who did not utilize [StudyWARE™].

—Jane Dumas, Allied Health Department Chair

Also available: StudyWARE™ CD-ROM Stand-alone to accompany Medical Terminology for Health Professions, Seventh Edition, ISBN: 1-1115-4334-8

PREMIUM WEBSITE

A Premium Website is available to accompany the text that includes the StudyWARE™, slide presentations created in PowerPoint®, animations, and Mobile Downloads.

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2. ENTER THE Access code in the Prepaid Code or Access Key field, **REDEEM**
3. REGISTER as a new user or LOG IN as an existing user if you already have an account with Cengage Learning or CengageBrain.com
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TO THE INSTRUCTOR

From the very first edition, *Medical Terminology for Health Professions* has been dedicated to breaking new ground that will make learning medical terminology faster and easier. In this seventh edition, the authors have maintained this standard of providing high-quality teaching materials for the mastery of medical terminology.

In the preparation of the seventh edition, all medical term definitions have been reviewed and updated as appropriate, and obsolete terms have been deleted. In addition, this latest edition of the text has an all-new art program, with original illustrations and contemporary photographs that will appeal to today's visual learner.

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To help instructors make the transition from the sixth edition to the seventh, all major changes in terms and content can easily be accessed through the “Conversion Guide” found on the Instructor Resources CD-ROM.

CHANGES TO THE SEVENTH EDITION

A detailed conversion guide that helps you make the change from the sixth to the seventh edition is included in the Instructor Resources. A brief summary of changes follows:

- The “Supplements At-a-Glance” feature briefly describes resource materials to accompany this textbook.
- Hundreds of new, full-color illustrations were added. There is also expanded use of photographs and multicultural images.
- Definitions for word parts were added to the vocabulary lists at the beginning of each chapter.
- Information was added in Chapter 1 on “Do Not Use” abbreviations.
- A section on complementary and alternative therapies was added to Chapter 15.
- Appendix C: Glossary of Pathology and Procedures is back by popular demand.
- A StudyWARE™ Connection feature was added to remind learners of animations, interactive games, and quizzes.
- A Mobile Downloads feature was added to direct learners to free online audio.
- A Workbook Practice feature was added.
- SOAP notes with study questions and answer keys were added to the Instructor’s Manual.
- Word search games using the Simplified Syllabus terms were added to the StudyWARE and Instructor’s Manual.

USING THE SIMPLIFIED SYLLABUS

In response to the needs of instructors who face the challenge of teaching a “brief” medical terminology course, the authors have developed a program called the Simplified Syllabus. By using these specialized teaching materials, which are based on the 60 terms and 15 word parts from the vocabulary list for each chapter, you can hold your students responsible just for this key information. These materials have been expanded to include:

- A **Simplified Syllabus Computerized Test Bank** with questions using these key terms and word parts for each chapter, plus a midterm and final test
- A **Simplified Syllabus Workbook** with written questions plus, just for fun, a crossword puzzle and word search at the end of each chapter (Workbook ISBN 1-1115-4328-3)
- **Simplified Syllabus Activities** in the Instructor’s Manual, which is part of the Instructor Resources CD-ROM and includes the new Word Search activity
- **Audio CDs** featuring all of the Simplified Syllabus terms pronounced and defined, which creates a flexible study aid for your students to use

AUDIO CDS

The Audio CDs include the pronunciation of the 60 terms from the vocabulary list for each chapter. After the pause, the word is pronounced again and then defined. These Audio CDs are a valuable, flexible, learning aid for use whenever and wherever the learner needs to study. Audio CDs, ISBN 978-1-1115-4332-7

THE INSTRUCTOR RESOURCES

The Instructor Resources is a robust computerized tool for your instructional needs! A must-have for all instructors, this comprehensive and convenient CD-ROM contains the following:

- **Textbook Teaching Resources** is an overview of the teaching resources featured in the text.
 - **Conversion Guide** helps you make the change from the sixth to the seventh edition of *Medical Terminology for Health Professions*.
 - **Textbook Learning Exercises Answer Keys** are included for your reference.
 - **Workbook Answer Keys** are also included.
 - **ExamView® Computerized Test Bank** contains two test banks of prepared questions: The **Standard Tests** include 100 questions per chapter plus a 50-question midterm test that covers Chapters 1 through 8, and a 100-question final test covering the entire text.
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"SOUNDS-LIKE" PRONUNCIATION SYSTEM

The sounds-like pronunciation system makes pronunciation easy by respelling the word with syllables you can understand—and say—at a glance. Simply pronounce the term just as it appears in parentheses, accenting the syllables as follows:

- **Primary** (strongest) **accent**: capital letters and bold type
- **Secondary accent**: lowercase letters and bold type

WORD PARTS

Because word parts are so important to learning medical terminology, whenever a term made up of word parts is introduced, the definition is followed (in parentheses) by the word parts highlighted in **magenta** and defined.

PRIMARY AND SECONDARY TERMS

- **Primary terms** are the most important medical words in a chapter. When first introduced, the term appears in **boldface** and, if appropriate, is followed by the sounds-like pronunciation. These are the words students need to concentrate on learning. Only primary terms are used as correct answers in the exercises and tests.
- **Secondary terms** appear in **orange** italics. These terms are included to clarify the meaning of a primary term. Although used as distracters in exercises, the secondary terms are not used as correct answers in exercises or tests.

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Each chapter includes 100 Learning Exercises in a variety of formats that require a one- or two-word written answer. Writing terms, rather than just circling a multiple-choice option, reinforces learning and provides practice in writing and spelling the terms.

THE HUMAN TOUCH: CRITICAL THINKING EXERCISE

A real-life ministry and related critical thinking questions at the end of each chapter that involves patients and pathology helps you apply what you are learning to the real world. There are no right or wrong answers, but just questions to get you started thinking about and using the new terms you have learned.

Cartilage

■ **Cartilage** (**KAR**-tih-lidj) is the smooth, rubbery, blue-white connective tissue that acts as a shock absorber between bones. Cartilage, which is more elastic than bone, also makes up the flexible parts of the skeleton such as the outer ear and the tip of the nose.

■ **Articular cartilage** (ar-TICK-you-lar **KAR**-tih-lidj) covers the surfaces of bones where they come together to form joints. This cartilage makes smooth joint movement possible and protects the bones from rubbing against each other (Figures 3.1

■ **Hemopoietic** (**hee**-moh-poy-ET-ick) means pertaining to the formation of blood cells (**hem/o** means blood, and **-poietic** means pertaining to formation). This term is also spelled **hematopoietic**.

■ **Yellow bone marrow** functions as a fat storage area. It is composed chiefly of fat cells and is located in the medullary cavity of long bones.

TABLE 3.1

Abbreviations Related to the Skeletal System

bone density testing - BDT	BDT - bone density testing
closed reduction - CR	CR - closed reduction
fracture - Fx	Fx - fracture
osteoarthritis - OA	OA - osteoarthritis
osteoporosis - OP	OP - osteoporosis
partial knee replacement - PKR	PKR - partial knee replacement
polyarthritis - PMR	PMR - polyarthritis
total hip arthroplasty - THA	THA - total hip arthroplasty
total knee arthroplasty - TKA	TKA - total knee arthroplasty

MATCHING WORD PARTS 1

Write the correct answer in the correct column.

Definition	Correct Answer	Possible Answers
3.1. therapy		therapy
3.2. cartilage		cartilage
3.3. removed, torn, soft		avulsed
3.4. joint		joint
3.5. irregular room ending		kyphosis

MATCHING WORD PARTS 2

Write the correct answer in the correct column.

Definition	Correct Answer	Possible Answers
3.6. (removes, soft)		avulsed
3.7. (is)		joint
3.8. setting back, joint		kyphosis
3.9. spinal cord, back		kyphosis
3.10. (is) back, the top		kyphosis

THE HUMAN TOUCH

Critical Thinking Exercise

The following story and questions are designed to stimulate critical thinking through the discussion of a real-life case. There are no right or wrong answers to these questions.

Dr. Johnson didn't like what he saw. The story of Gladys Cooper's hip showed a picture of the human body and a series of events that Dr. Johnson had never witnessed in the operating room. The patient had a total hip replacement, a procedure that Dr. Johnson had never performed. The patient had a total hip replacement, a procedure that Dr. Johnson had never performed. The patient had a total hip replacement, a procedure that Dr. Johnson had never performed.

Suggested Discussion Topics

- Discuss the patient's condition. Gladys Cooper was not too old to need a hip replacement. What factors led to her condition? How did the patient's condition affect her life? How did the patient's condition affect her life?
- Discuss the medical procedure. What factors led to the patient's condition? How did the patient's condition affect her life? How did the patient's condition affect her life?

How to Use



StudyWARE to accompany *Medical Terminology for Health Professions, Seventh Edition*

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Minimum System Requirements:

- Microsoft Windows XP w/SP 2, Windows Vista w/SP 1, Windows 7
- Mac OS X 10.4, 10.5, or 10.6
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- Memory: Minimum required by Operating System
- Hard Drive Space: 540 MB
- Screen resolution: 1024 x 768 pixels
- CD-ROM drive
- Sound card and listening device required for audio features
- Flash Player 10. The Adobe Flash Player is free, and can be downloaded from www.adobe.com/products/flashplayer/

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GETTING STARTED

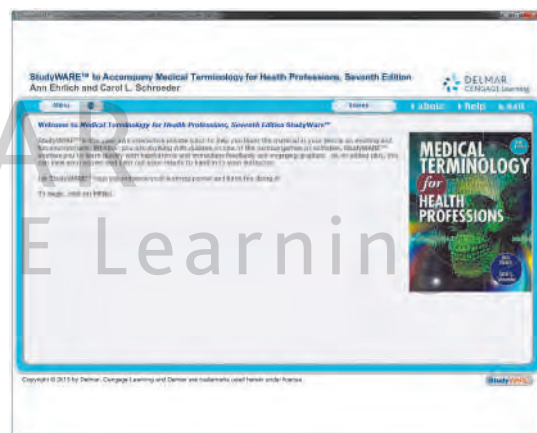
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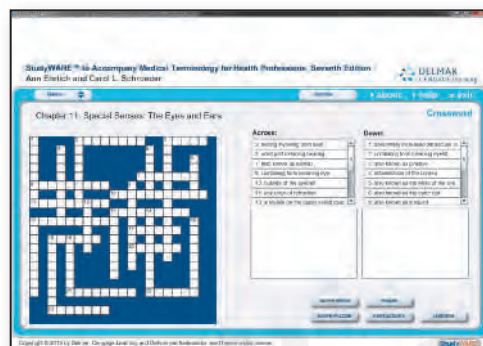
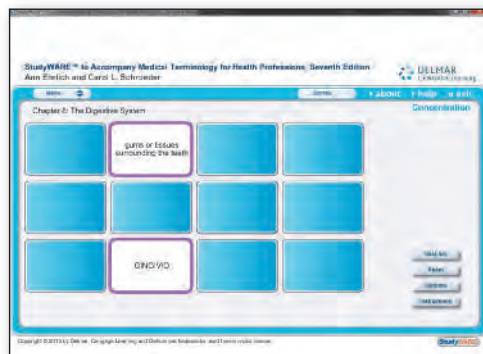
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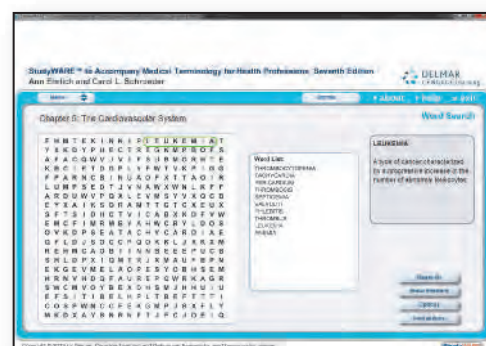
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