

FIFTH EDITION



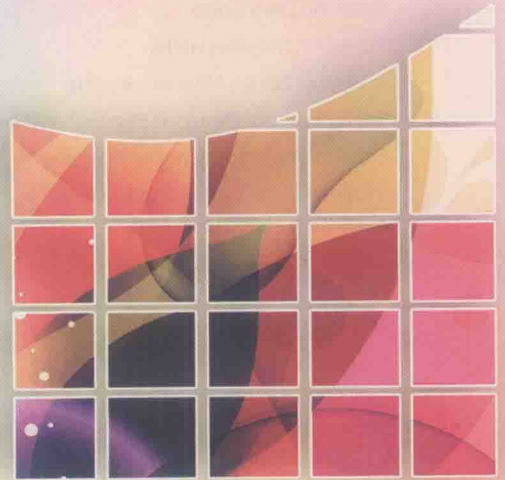
HEALTH ASSESSMENT & PHYSICAL EXAMINATION

Mary Ellen Zator Estes



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HEALTH ASSESSMENT & PHYSICAL EXAMINATION



FIFTH EDITION

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**Health Assessment & Physical Examination,
Fifth Edition****Mary Ellen Zator Estes**Vice President, Career and Professional
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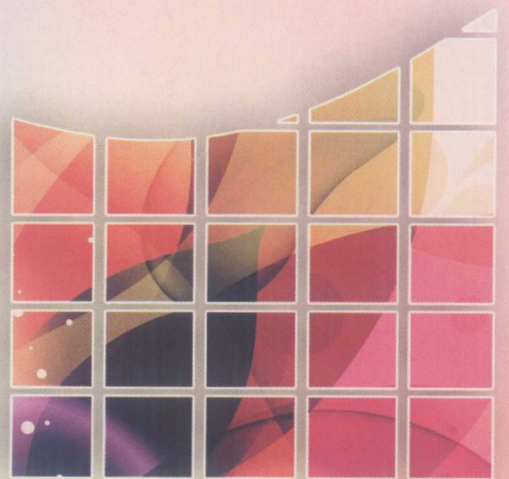
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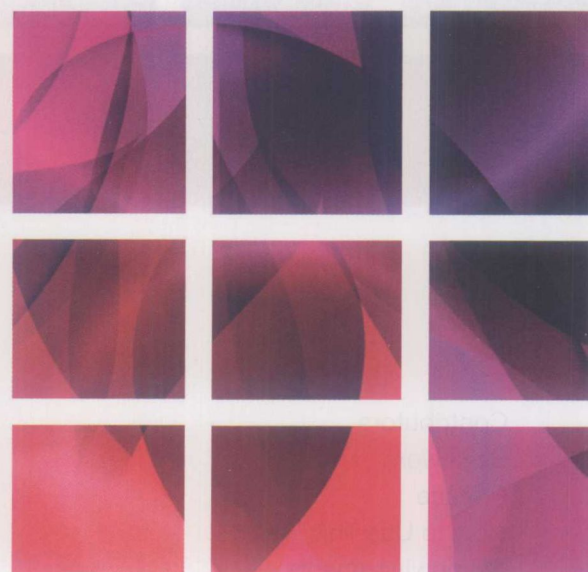
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HEALTH ASSESSMENT & PHYSICAL EXAMINATION



FIFTH EDITION

To my nursing colleagues who work tirelessly
to keep abreast of the information explosion
in this digital age in order to deliver
high-quality patient care.



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PREFACE

Health assessment forms the foundation of all nursing care. Assessment is an ongoing process that evaluates the whole person as a physical, psychosocial, and functional being, whether the patient is young or old, well or ill. *Health Assessment & Physical Examination*, fifth edition, provides a highly illustrated approach to the process of holistic assessment, including health assessment, physical examination skills, clinical examination techniques, and patient teaching guidelines.

Readers will welcome the text's clear presentation as they learn the basic skills of health assessment and physical examination. Practicing nurses will find the book helpful as a review of the pathophysiological basis for abnormal findings to update their knowledge base.

CONCEPTUAL APPROACH

This text is designed to teach readers to assess a patient's physical, psychological, social, emotional, cultural, spiritual, and nutritional dimensions of health as a foundation of nursing care. The skills of interviewing, inspection, palpation, percussion, auscultation, and documentation are refined to teach readers to make clinical judgments and promote positive patient outcomes.

The concept for *Health Assessment & Physical Examination*, fifth edition, arose from a need for straightforward, well-organized examination information that could be easily read and assimilated. The goals that form the foundation of this text are empowering readers as educated decision makers, developing their skills of analysis and critical thinking, and encouraging excellent clinical and nursing skills.

Health Assessment & Physical Examination, fifth edition, embraces a dual focus based on nursing as the art and science of caring. Strong emphasis on science encompasses all the technical aspects of anatomy

and physiology, and examination, while highlighting clinically relevant information. Emphasis on caring is displayed through themes of assessment of the whole person; developmental, cultural, spiritual, familial, and environmental considerations; patient dignity; and health promotion. Such an approach encourages nurses to think about and care for themselves as well as their patients.

Health Assessment & Physical Examination, fifth edition, offers a user-friendly approach that delivers a wealth of information. The consistent, easy-to-follow format with recurring pedagogical features is based on two frameworks:

1. The **IPPA** method of examination (**I**nspection, **P**alpation, **P**ercussion, **A**uscultation) is consistently applied to body systems for a complete, detailed physical examination.
2. The **ENAP** format (**E**xamination, **N**ormal Findings, **A**bnormal Findings, **P**athophysiology) is followed for every IPPA technique, providing a useful and valuable collection of information. Pathophysiology is included for each abnormal finding, acknowledging that nurses' clinical decisions must be based on scientific rationale. It also enables the reader to study the content specifically relevant to her or his own practice.

Readers of *Health Assessment & Physical Examination*, fifth edition, will need an understanding of anatomy and physiology, as well as a familiarity with basic nursing skills and the nursing process.

ORGANIZATION

Health Assessment & Physical Examination, fifth edition, consists of 27 chapters organized into five units. **Unit 1** lays the foundation for the entire assessment process by

guiding the reader through the nursing process, the critical thinking process, communication techniques and the patient interview, and the health history. Specific tips on professionalism, approaching patients, and discussing sensitive topics help the reader understand the importance of the nurse-patient partnership in the assessment process.

Unit 2 highlights developmental, cultural, spiritual, and nutritional areas of assessment, emphasizing the holistic nature of the assessment process. These chapters are key in encouraging the reader to be aware of personal feelings and biases and how they may affect interactions with patients and coworkers.

Unit 3 opens with a description of fundamental examination techniques, including measuring vital signs and assessing pain, and then details examination procedures and findings for specific body systems. The format used for all applicable physical examination chapters in this unit includes:

1. Anatomy and physiology
2. Health history
3. Equipment
4. Physical examination
 - a. Inspection
 - b. Palpation
 - c. Percussion
 - d. Auscultation
5. U.S. Preventive Services Task Force (USPSTF) Recommendations
6. Case study

The examination techniques presented are described for adult patients. Because examination techniques and findings may differ in pregnant women, children, and the older adult, these populations are discussed in separate chapters in **Unit 4**. The chapter on the pregnant patient includes variations in examination techniques and special techniques used only on pregnant patients, as well as normal and abnormal findings related to pregnancy. The chapter on the pediatric patient presents physical differences in the examination and explains special techniques used only with children. The chapter on older adults highlights the functional, psychological, developmental, and cognitive assessments, and physical examination skills that are appropriate for this population.

Unit 5 helps the reader assimilate and synthesize the wealth of information presented in the text in order to perform a thorough, accurate, and efficient health assessment and physical examination. Specific guidelines and reminders on gaining patients' cooperation, being sensitive to legal and ethical considerations, and documenting accurately make this unit a complete health assessment and physical examination resource tool.

NEW TO THIS EDITION

- All-new multicultural case studies humanize the material and help readers apply the critical thinking concepts that they learned in the chapters.
- More than 130 new photographs and illustrations have been added.
- The U. S. Preventive Services Task Force recommendations are presented in each chapter where they apply.
- New review questions have been added at the end of each chapter.
- Updated bibliographies and Websites allow readers to broaden their knowledge base regarding the material presented in each chapter.

Chapter-specific enhancements are also highlighted in this new edition:

- **Chapter 1, Critical Thinking and the Nursing Process**, updates NANDA International's nursing diagnoses.
- **Chapter 2, Communication Techniques and the Patient Interview**, includes a section on telenursing and lesbian-gay-bisexual-transgender (LGBT) communication.
- **Chapter 3, The Complete Health History Including Documentation**, introduces the U. S. Preventive Services Task Force Recommendations. The CDC's adult immunization schedule is presented. There is an expanded section on genomics. In addition, a new screening tool for domestic and intimate partner violence is included.
- **Chapter 4, Developmental Assessment**, offers additional developmental assessment tools.
- **Chapter 5, Cultural Assessment**, has updated, extensive references and provides a comprehensive cultural assessment case study.
- **Chapter 6, Spiritual Assessment**, revises its discussion on religion and spirituality and the health effects of religion and spirituality.
- **Chapter 7, Nutritional Assessment**, includes the *Dietary Guidelines for Americans* (2010), and the new nutrition schematic, MyPlate. In addition, sections on folic acid and vitamin B₁₂ have been added to represent current trends in nutritional assessment.
- **Chapter 8, Physical Examination Techniques**, updates the CDC elements of Standard Precautions.
- **Chapter 9, General Survey, Vital Signs, and Pain**, introduces the use of the temporal artery thermometer. New pain health history and pain management strategies are discussed.
- **Chapter 10, Skin, Hair, and Nails**, illustrates how to conduct a skin self-examination. The Braden scale is introduced.
- **Chapter 11, Head, Neck, and Regional Lymph Nodes**, updates thyroid cancer risk factors.

- **Chapter 12, *Eyes***, presents the Advanced Technique of assessing for macular degeneration via the Amsler Grid.
- **Chapter 13, *Ears, Nose, Mouth, and Throat***, includes timely information on presentation of “meth mouth.”
- **Chapter 14, *Breasts and Regional Lymph Nodes***, has updated breast cancer risk factors. Breast inspection and palpation of the woman who has had a mastectomy or breast augmentation are addressed.
- **Chapter 15, *Thorax and Lungs***, mentions the resurgence of pertussis in the United States. Lung cancer and pneumonia risk factors are updated.
- **Chapter 16, *Heart***, now devotes an entire chapter to fully address the assessment, risk stratification, and examination of the healthy patient, as well as the patient with known cardiac disease.
- **Chapter 17, *Peripheral Vasculature and Lymphatic System***, presents a comprehensive discussion of anatomy and physiology of the lymphatic system, as well as examination techniques of the lymphatic system. A new table compares arterial and venous insufficiency.
- **Chapter 18, *Abdomen***, updates risk factors for gastrointestinal cancers and hepatitis. The American Cancer Society’s guidelines for detecting colon cancer are included.
- **Chapter 19, *Musculoskeletal System***, details the Advanced Techniques of the Hawkins and Neer Impingement Signs and the Finklestein Test.
- **Chapter 20, *Mental Status and Neurological Techniques***, describes how to assess the anal reflex. In addition, this chapter covers the Advanced Technique of testing for diabetic peripheral neuropathy.
- **Chapter 21, *Female Genitalia***, updates risk factors for female genitalia cancers and cervical cancer screening guidelines.
- **Chapter 22, *Male Genitalia***, updates risk factors for HIV and male genitalia cancers. Guidelines for men who have sex with other men are also updated. The topic of administering the human papillomavirus vaccine to young boys and men is discussed.
- **Chapter 23, *Anus, Rectum, and Prostate***, provides guidelines for the early detection of prostate cancer.
- **Chapter 24, *The Pregnant Patient***, explains the TPAL system.
- **Chapter 25, *The Pediatric Patient***, provides updated CDC immunization charts as well as the WHO growth charts.
- **Chapter 26, *The Older Adult Patient***, addresses self-determination assessment, as well as the geriatric syndromes that include falls and sleep assessments.
- **Chapter 27, *The Complete Health History and Physical Examination***, discusses the U.S. government’s health initiative, *Healthy People 2020*.

SPECIAL FEATURES

Many successful features from the previous editions of *Health Assessment & Physical Examination* have been retained in this new edition. These features stimulate critical thinking and self-reflection, develop technical expertise, and encourage readers to synthesize and apply the information presented in the text.

- **Reflective Thinking** boxes introduce ethical controversies and clinical situations that readers are likely to encounter, stimulating critical thinking, effective decision making, and active problem solving. They also promote self-examination on particular issues so readers can understand the varying viewpoints possibly held by patients and coworkers. These boxes encourage reflection on issues in a personal context, raise awareness of the diversity of opinions, and foster empowerment.
- **Life 360°** boxes help readers examine their feelings and emotional behavior, with the goal of being at ease with diverse types of patients. These boxes also instruct nurses on how to make their patients comfortable.
- **Nursing Checklists** offer an organizing framework for the examination of each body system or for approaching a given task. Certain **Nursing Checklists** outline specific questions or points to consider when caring for patients who use assistive devices.
- **Nursing Tips** help the reader to apply basic knowledge to real-life situations and offer hints and shortcuts useful to both new and experienced nurses.
- **Nursing Alerts** highlight serious or life-threatening signs or critical examination findings that require immediate attention.
- **Risk Factor** boxes highlight risk factors for many types of cancer and other disease states.
- The **ENAP** format (examination, normal findings, abnormal findings, pathophysiology) allows the reader to study the content that is specifically relevant to her or his own practice. The **IPPA** format (inspection, palpation, percussion, and auscultation) is applied consistently to each examination skill.
- **Health Histories** outline all areas of assessment related to each body system. The standard format used throughout the text teaches the importance of consistency and organization when discussing topics with patients during the health history interview.
- **Case Studies** humanize the material and help readers apply critical thinking concepts. They present realistic scenarios and offer readers an opportunity to apply the chapter material, thereby encouraging extrapolation and intuitive thinking. These case studies list normal and abnormal examination findings in the context of a clinical scenario. Each case study includes a sample patient health history, physical examination findings,

and (when appropriate) laboratory data and diagnostic studies. Case studies exemplify objective documentation to serve as models for accurate charting. Many case studies are written in abbreviated format to simulate real clinical documentation, but they deliberately use different charting styles to reflect the wide variety of norms in actual clinical practice.

PEDAGOGICAL FEATURES

Health Assessment & Physical Examination, fifth edition, also includes many pedagogical features that promote learning and accessibility of information. This text guides the novice as well as the advanced practice nurse in the art and science of conducting a comprehensive health history, health assessment, and physical examination.

- **Competencies** open each chapter and introduce the main areas targeted for mastery in each chapter. They also provide a checkpoint for study and tie in to crucial examination skills.
- **Outstanding photographs and illustrations** highlight examination techniques and procedures, anatomy and physiology, and normal and abnormal findings. The photo program is expanded and updated.
- **Key Terms** are highlighted and defined in the text the first time they are used.
- **Assessment in Brief** sections at the end of chapters offer a conceptual framework for chapter review, highlighting main points.
- **Review Questions** offer readers an opportunity to assess their understanding of the content and better define areas where they need additional study. All chapters include self-quizzes on key information to test knowledge.
- **References** and a **Bibliography** document the theoretical basis of each chapter and provide additional resources for continued study.
- **Website** boxes at the end of each chapter direct the reader to additional online resources.
- Tear-out **Assessment in Brief Cards** summarize the critical facts in each content area on a handy, user-friendly card that can be carried to the clinical setting.
- The **Glossary** at the end of the book defines all key terms used in the text and serves as a comprehensive resource for study and review.
- The **Index** facilitates access to material and includes special entries for tables and illustrations.
- A list of **Abbreviations and Symbols** inside the back text cover includes common abbreviations used in charting, along with their definitions, for quick reference.

Learning Package for the Student

The **Premium Website** is available to purchasers of the text, and is accessed at **www.CengageBrain.com**. Enter your passcode, found in the front of the book, and the Premium Website will be added to your bookshelf. Here you can access online tools including answers with rationales for the text Review Questions, course preparation notes, and chapter glossaries.

ISBN 978-1-1336-1065-6

The *Clinical Companion to Accompany Health Assessment & Physical Examination*, fifth edition, is a pocket-sized clinical guide. The content mirrors that of the main text, focusing on easy access and rapid retrieval of information.

ISBN 978-1-1336-1095-3

The *Student Lab Manual to Accompany Health Assessment & Physical Examination*, fifth edition, provides a guide for laboratory activities and a means of exploring and applying concepts presented in the core text. Features include:

- A list of key terms in each chapter to facilitate learning of terminology
- Laboratory activities to review chapter content
- Health History questions for readers to complete
- Physical examination skills checklists for readers to document their findings
- Self-assessment quizzes for every chapter
- A list of abbreviations

ISBN 978-1-1336-1094-6

CourseMate, accessed at **www.Cengage.com/coursemate**, helps you make the most of your study time by offering access in one place to everything you need to succeed. *Health Assessment & Physical Examination* CourseMate includes an interactive eBook with highlighting and note-taking ability, and an interactive glossary. Interactive learning tools include discussion topics, frequently asked questions, chapter summaries, quizzes, animations, audio glossary, heart and lung sounds audios, videos, and more!

ISBN 978-1-1336-1058-8 (printed access code) and 978-1-1336-1056-4 (individual access code)

Teaching Package for the Instructor

The **Instructor Companion Website** is a complete teaching tool to aid instructors in preparing lessons,

The **Instructor's Guide** includes:

- The **Computerized Test Bank** includes multiple-choice, NCLEX-style questions for each chapter and can be used

Lecture slides are a vital resource for instructors. These presentations, created in PowerPoint for each chapter, parallel the content in the textbook, serving as a foundation on which instructors may customize their own presentations.

The **Image Library** is a software tool that includes an organized digital library of hundreds of illustrations and photographs from the text. Copy and save any of the images to facilitate classroom presentations. You can also easily paste images into a Microsoft PowerPoint presentation.

CourseMate, accessed at **www.Cengage.com/coursemate**, as described above, includes Engagement Tracker, a first-of-its-kind tool that allows instructors to monitor student engagement in the course.

HOW TO USE THIS TEXT

These pages offer suggestions for how you can use the features of this text to gain competence and confidence in your examination skills.

Inspection and Palpation of Inguinal Lymph Nodes

The inguinal area contains both deep and superficial lymph nodes, but only the latter are palpable. These lymph nodes are grouped into superior and inferior chains. The superior chain is located horizontally near the inguinal ligament and the inferior chain lies vertically below the junction of the saphenous and femoral veins.

1. Place the patient in a supine position, with the knees slightly flexed.
2. Drape the genital area.
3. Inspect the groin for lymphadenopathy.
4. Using the finger pads of the second, third, and fourth fingers, apply firm pressure and palpate the inguinal area with a rolling motion (Figure 17-21).
5. Palpate inguinal nodes for size, shape, consistency, tenderness, and mobility.

6. Repeat this process on the patient's other side.

N Inguinal lymph nodes should not be seen. It is normal to palpate small, soft, movable, and nontender nodes less than 1 cm in diameter.

A The presence of inguinal lymph nodes greater than 1 cm in diameter or elicitation of nonmovable, tender lymph nodes is abnormal.

P Large, palpable nodes can be attributed to localized or systemic infections. Remember that this enlargement might be a sign that the nodes are performing their job when the infection subsides, the lymph node(s) should return to normal size.

P More serious pathology includes processes associated with cancer or lymphomas.

A The presence of swelling in the legs is abnormal.

P The inguinal nodes filter lymph from the legs before the lymph heads toward the thoracic duct, so swelling in the legs may indicate an obstruction. Use a tape measure to assess the patient's calf circumference if any swelling is noted in the lower limbs.



Figure 17-21 ■ Palpation of inguinal lymph nodes. © Cengage Learning 2014.

Inspection and Palpation of Popliteal Lymph Nodes

Popliteal lymph nodes average five to seven per lower extremity and are embedded in the fat of the popliteal fossa.

1. Place the patient in a supine position, with the knees slightly flexed.
2. Using the finger pads of the second, third, and fourth fingers of both hands, apply firm pressure and palpate the popliteal fossa of each leg (Figure 17-22).
3. Palpate popliteal nodes for size, shape, consistency, tenderness, and mobility.
4. If an enlarged node is palpated, ask the patient to assume a side-lying or prone position to inspect for visible lymphadenopathy.

N Normally, popliteal lymph nodes are not visible or palpable.

A An enlarged popliteal lymph node is abnormal.

P Enlarged popliteal nodes may result from foot injuries. Consider that this enlargement might be a sign that the nodes are performing their job; when the infection subsides, the lymph node(s) should return to normal size.

P A popliteal abscess may be mistaken for swollen nodes and occurs with inflammation of the knee joint, leg, or foot.



Figure 17-22 ■ Palpation of popliteal lymph nodes. © Cengage Learning 2014.

E Examination

N Normal Findings

A Abnormal Findings

P Pathophysiology

ENAP FORMAT: In order for the examination process to become second nature for you, we have highlighted each step of the ENAP process:

Examination sequences show you the step-by-step process of performing an examination skill.

Normal Findings, highlighted in blue, describe what you will find in a normal examination.

Abnormal Findings state the variations from normal you may see in pathological states.

Pathophysiology explains the scientific rationale for abnormal conditions; many are illustrated.

ENAP reminder boxes repeat on examination pages for easy reference.

REFLECTIVE THINKING

Assessing the Patient with Severe Odors

A patient has severe halitosis and you need to conduct a physical examination. Describe your approach and list the questions you would pose to discover the cause of the odor, while maintaining respect for the patient's dignity.

REFLECTIVE THINKING helps you develop sensitivity to ethical and moral issues and guides you to think critically in clinical situations and become an active problem solver. You may want to read each one and explore the issues *before* reading the chapter. Then, as you read the chapter, evaluate your original thoughts. If you read the boxes as you go through the chapter, you may want to write down your thoughts, then go back and look at them later.

LIFE 360°**Assessing for Distress**

Think of the last patient you cared for who was in distress. Recall the physical, physiological, and emotional signs and symptoms that the patient exhibited. How are these signs and symptoms different from those of patients who are not experiencing distress?

LIFE 360° boxes explore situations throughout the lifespan. Page through and read each one *before* reading the chapter. Then challenge yourself to evaluate your own opinions after reading all of the chapter content.

ANATOMY AND PHYSIOLOGY:

Understanding the function of the body systems is an important component of completing an accurate examination. The information necessary for a complete and accurate examination is highlighted, and detailed illustrations help you visualize anatomy in the context of an actual patient.

The heart's primary function is to pump blood to all parts of the body. The circulating blood not only brings oxygen and nutrients to the body's tissues, but also helps to take away the body's waste products. The body's activities determine the amount of blood that is pumped. The heart will beat faster or slower and the blood vessels will expand or relax so as to properly distribute the blood that the body demands.

ANATOMY AND PHYSIOLOGY**Heart**

In a resting, healthy adult, the heart contracts 60 to 100 times while pumping 4 to 5 liters of blood per minute. An individual's heart is about the size of a clenched fist. The human heart is remarkably efficient considering its size in relation to the rest of the body.

The heart is located in the thoracic cavity between the lungs and above the diaphragm in an area known as the mediastinum (Figure 16-1). The **base** of the heart is the uppermost portion, which includes the left and right atria as well as the aorta, pulmonary arteries, and the superior and inferior venae cavae. These structures lie behind the upper portion of the sternum. The **apex**, or lower portion of the heart, extends into the left thoracic cavity, causing the heart to appear as if it is lying on its right ventricle.

Pericardium

The heart and roots of the great vessels lie within a sac called the pericardium, which is composed of fibrous and serous layers. The fibrous layer is the outermost

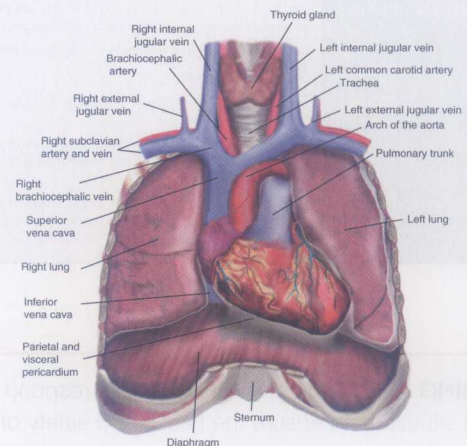


Figure 16-1 ■ Position of the heart in the thoracic cavity. © Cengage Learning 2014.

NURSING CHECKLIST**General Approach to Peripheral Vasculature Examination**

1. Explain to the patient what you are going to do.
2. Ensure that the room is warm and well lit.
3. Use a drape and uncover only those areas that are necessary as the examination is done.
4. Position the patient in a supine or sitting position.

NURSING CHECKLISTS outline important points for you to consider for an examination skill. Checklists also serve as a reference guide to reviewing procedural steps and summarizing the examination process.

NURSING TIPS: The wide variety of helpful hints, tips, and strategies presented here will help you as you work toward professional advancement. Study, share, and discuss them with your colleagues.

NURSING TIP
"FIT" Acronym

An easy way to remember what questions to ask a patient regarding an exercise regimen is to use the "FIT" acronym:

- F—is for the **F**requency of the activity
- I—is for the **I**ntensity of the activity
- T—is for the **T**iming, or duration, of the activity



HEALTH HISTORY

PATIENT PROFILE

The skin, hair, and nails health history provides insight into the link between a patient's life/lifestyle and skin, hair, and nails information and pathology.

Diseases that are age-, gender-, and race-specific for the skin, hair, and nails are listed.

Age

Fungal infections, diseases of sebaceous glands, such as acne vulgaris (13–26 years)

Skin

Lupus erythematosus, psoriasis, hyperpigmented macular lesions, skin tags (acrochordons), dermatophyte infections (25–60 years)
Melanoma (40–60 years)
Basal cell carcinoma (older adults)

Hair

Male pattern alopecia (adolescence to young adulthood)

Thinning, graying, loss of hair in axillary and pubic areas, excessive facial hair (middle to old age)

Gender

Skin

Male: Skin pathology is consistently more prevalent among males than females; dermatophyte infections, skin tumors, fungal infections, and increased incidence of tumors related to occupational hazards and hygiene; Kaposi sarcoma associated with immunodeficiency conditions

Hair

Female: Female pattern alopecia, increased facial hair with aging

Male: Alopecia, increased coarse nose and ear hair with aging

Race

Dark Skinned

Keloid formation, dermatosis papulosa nigra, hyper- and hypopigmentation, traumatic marginal alopecia, seborrheic dermatitis, pseudofolliculitis barbae, acne keloidalis, granuloma inguinale, Mongolian spots, albinism, hypopigmented sarcoidosis, granulomatosis skin lesions

Light Skinned

Squamous and basal cell carcinoma, actinic keratosis, psoriasis

CHIEF COMPLAINT

Common chief complaints for the skin, hair, and nails are defined, and information on the characteristics of each sign and symptom is provided.

1. Pruritus

Cutaneous itching that may have a multitude of etiologies

Location

Generalized or localized

Quality

Superficial or deep sensation of itching, intensity of itching, interference with sleep habits

Associated Manifestations

Rashes, lesions, edema, angioedema, anaphylaxis, excoriation or ulcers as the result of scratching, **lichenification** (thickening of the skin), systemic disease

Aggravating Factors

Exposure to chemicals, sunlight, plants, food, animals, stress, climate, parasites, xerosis, drug reaction, systemic disease processes, contact dermatitis, types of clothing (frequently wool)

HEALTH HISTORIES teach you an organized, thoughtful, and consistent approach to patient care, and guide your interview through each body system. This enables you to link health history clues to the patient's clinical status.

NURSING ALERTS help you identify and respond efficiently and effectively to critical situations to ensure the health and safety of your patients.

NURSING ALERT

The Confused Patient

The confused patient should be thoroughly assessed for aphasia. A missed diagnosis because of “confusion” can be fatal if aphasia is present and due to a subdural hematoma. Check for other signs associated with a subdural hematoma, including headache, slow cerebration, decreasing level of consciousness, and ipsilateral pupil dilation with a sluggish response to light.

ADVANCED TECHNIQUES help you identify examination sequences that are performed in selected clinical scenarios based on a patient's clinical presentation and history.



ADVANCED TECHNIQUE

Skin Scraping for Scabies

1. Place a drop of mineral oil on a sterile #15 scalpel blade.
2. Scrape the suspected papule or known scabies burrow vigorously to excavate the top of the papule or burrow. Flecks of blood will mix with the oil.
3. Place some of the oil and skin scrapings onto a microscope slide and cover with a cover slip.
4. Examine the slide for mites, ova, or feces.