History and Physical Examination

A COMMON SENSE APPROACH

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Dedication

This book is dedicated to our daughter Jade.
Our love for you had no beginning and has no end, only a life in and of itself.
You are amazing.

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About the Author

Mark Kauffman, DO, MS (Med Ed), PA, did his undergraduate studies at St. Francis University (Loretto, Pennsylvania) in the physician assistant program. He earned his Doctor of Osteopathic Medicine and Master of Science in medical education degrees at Lake Erie College of Osteopathic Medicine (LECOM). He is board certified in family medicine. Dr. Kauffman is assistant dean of graduate studies at LECOM. He developed and is director of the Accelerated Physician Assistant Pathway, an innovative three-year medical school curriculum for physician assistants who seek to obtain DO degrees, and the history and physical examination curriculum.

Introduction

The best way to learn how to obtain accurate, detailed patient histories, perform problem-specific physical examinations, devise essential differential diagnoses, construct evidenced-based treatment plans, and ultimately perform complete history and physical examinations leading to maximal care of your patient is to incorporate them into the study of medicine from the very beginning.

As you develop familiarity with the practice of medicine, logical thinking takes over, with intuition leading the way. With familiarity comes the risk of complacency and often the habit of taking shortcuts. When the day comes in which you mechanically listen to a patient's heart, begin to walk away, realize you might have heard something, and listen again, only to discover the nearly missed murmur, let it be a valuable lesson to you to humbly go back to your roots and the basics of your medical knowledge.

If there is one goal for this text, it is to encourage you to use common sense in your approach to patient care, hence the title. There are some classic memory aids, such as "On Old Olympus' Towering Top," for the cranial nerves, and you will undoubtedly invent some of your own, but when you resort to your logic, you are more apt to understand the material instead of memorizing it. Though at first you will need to memorize the physical exam flows, you will encounter them so often when you begin your clinical training that they will become standard procedure without effort, allowing only your patient's body to guide you through the exam.

Chapter 1, *Clinical Competencies*, discusses the competency-based educational movement and its potential to improve patient health by lessening unnecessary and unexplained variation in the process of clinical care. Students in healthcare professions must have the education and experience to assure the highest-quality patient care and public safety. The competencies are a calling of the healthcare professional and represent accountability to ourselves, our peers, and, of ultimate importance, our patients.

Chapter 2, *Interpersonal and Communication Skills*, is an exploration of the thought processes and actions behind obtaining a history. This includes what one does prior to walking into a patient room that will lead to a more accurate patient history. The medical provider may be able to ask all the right questions, but without competence within the humanistic domain, compassion, empathy, and professionalism, the bond of trust is difficult to forge.

Chapter 3 introduces the mnemonic CODIERS SMASH FM, an essential tool that allows the gathering of a detailed historical account of the patient's presenting complaint, and guides you through the patient's medical history, where buried clues, when unearthed, dramatically affect the outcome of the case. It further discusses techniques involved with clinical history taking. Why is history so important? It has been said that 90% of diagnoses are made through the history alone. If the patient is not asked the right questions, the correct diagnosis is much more likely to be missed.

Chapter 4 comprises history flows that represent patient case presentations. Each encounter is designed for you and a partner: schoolmate, friend, family member, or anyone you can compel to act as your patient. Armed with only your patient's primary reason for seeking your counsel, you must obtain the medical history from your patient, who provides you with scripted answers. Acute attention will allow you to identify those hidden clues that require further exploration to enable you to reach the correct conclusions. Early on you may not get the correct diagnosis, but you must still propose what is most likely, as this is the very essence of why we take histories. As your medical

studies progress, your goal should be to expand your impressions to include several possible diagnoses: the differential diagnosis.

Chapter 5 introduces physical examination and approaches the body in a logical progression, essentially head to toe. The physical examination flows, presented in the head-to-toe fashion, encourage the student to allow the patient's body to dictate the order of examination and to repeat the exam in precisely the same fashion from patient to patient. This order, however, is provider dependent, meaning that once you master the exam techniques, you will perform these exams in the order that you find most logical. For example, after completing an abdominal exam, you may immediately feel for the femoral pulses, which lie right below the abdomen in the inguinal area. From there, you may complete the rest of the peripheral vascular exam, and then switch over to the musculoskeletal system, examining the extremities first. If, on the other hand, you reach the bottom of the abdomen and it makes you logically think of the longest nerve in the body—the vagus—then you may choose to perform the neurologic examination next. There is no right or wrong method, only completeness.

Chapters 6 through 15 then break down physical examination by system. Each chapter ends with a physical examination flow that guides the student through a comprehensive examination of the patient. Interweaving the techniques of examination with the head-to-toe, front-to-back approach allows the provider to develop a standardized approach to examination that becomes ingrained with practice, removing the need to memorize what should be done.

Chapter 16 brings history taking and physical examination together through the comprehensive flow, which represents the typical 15-minute patient encounter. Providers combine history taking with the performance of a problem-specific physical examination, allowing the development of a differential diagnosis and working with the patient to develop a plan of treatment.

Chapters 17 and 18 look at the approaches to history taking and examination of pregnant and pediatric patients, respectively.

Chapter 19 is a summation of documentation of patient encounters. The proper mindset required for appropriately documenting an encounter should be visualized as the patient's chart being read 5 years from the encounter by someone unfamiliar with the patient. If, by reading about the encounter, that person can understand the patient's story, visualize the patient in his/her mind, understand the thought process that led to the diagnosis, and evaluate the treatment plan to assure that the standard of care was followed, you have succeeded in proper documentation. This chapter guides you through the structure of the most common form of medical documentation, the SOAP note, as well as the documentation of standard admission and progress notes, and the full physical examination.

Becoming a great provider requires astute observation skills and heightened awareness of intuition. Learning from your peers and patients is a lifelong experience. Study hard but retain the ability to laugh at yourself. Humility is a wise teacher.

Early in my medical training, I was sitting in a crowded room where a lecture on emergency bleeds was to be presented. A physician came in and remarked that the topic was appropriate because a patient had just arrived in the emergency room with bleeding varices that were life threatening. Perplexed, I quietly leaned over to my supervisor and asked how someone could die from a bleed in the scrotum. How she refrained from laughing when she explained to me that the patient had *esophageal varices*, not a *scrotal varicocele*, is beyond me. With humbleness, we should all embark down the trail of the study of medicine.

Features of This Text

History and Physical Examination: A Common Sense Approach incorporates a number of engaging pedagogical features to aid in the student's understanding and retention of the material. Each chapter begins with **Objectives** and **Key Terms**, to guide learning and provide reference for the most important points covered in the chapter.

OBJECTIVES

At the conclusion of this chapter, the student will be able to

1. Discuss the evolution of the competency-based medical education movement in the United States
2. Define *competent* and relate it to the continuum of learning as described by Dreyfus and Dreyfus
3. Discuss the competency-based medical education movement in countries outside of the United States and in professions outside of medicine
4. Define each of the major competencies used in medical education in the United States and list behaviors expected of competent providers for each competency
5. Describe some of the issues that will face medical educators as the competency-based medical education movement continues to evolve

KEY TERMS

Competency-based education
Competencies
Medical knowledge
Patient care
Professionalism
Interpersonal and communication skills
Systems-based practice
Practice-based learning and improvement
Evidence-based medicine
Medical quality

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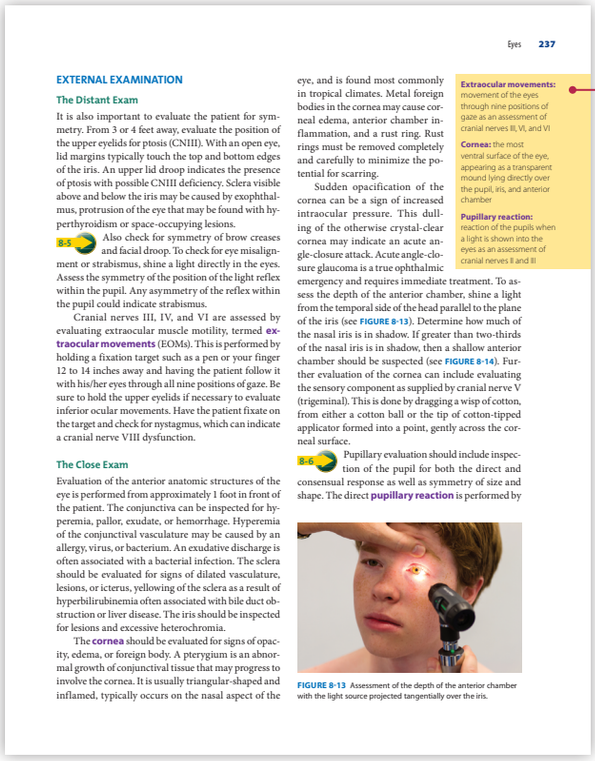

Eyes 237

EXTERNAL EXAMINATION

The Distant Exam

It is also important to evaluate the patient for symmetry. From 3 or 4 feet away, evaluate the position of the upper eyelids for ptosis (CNIII). With an open eye, lid margins typically touch the top and bottom edges of the iris. An upper lid droop indicates the presence of ptosis with possible CNIII deficiency. Sclera visible above and below the iris may be caused by exophthalmus, protrusion of the eye that may be found with hyperthyroidism or space-occupying lesions.

8-5 Also check for symmetry of brow creases and facial droop. To check for eye misalignment or strabismus, shine a light directly in the eyes. Assess the symmetry of the position of the light reflex within the pupil. Any asymmetry of the reflex within the pupil could indicate strabismus.

Cranial nerves III, IV, and VI are assessed by evaluating extraocular muscle motility, termed **extraocular movements** (EOMs). This is performed by holding a fixation target such as a pen or your finger 12 to 14 inches away and having the patient follow it with his/her eyes through all nine positions of gaze. Be sure to hold the upper eyelids if necessary to evaluate inferior ocular movements. Have the patient fixate on the target and check for nystagmus, which can indicate a cranial nerve VIII dysfunction.

The Close Exam

Evaluation of the anterior anatomic structures of the eye is performed from approximately 1 foot in front of the patient. The conjunctiva can be inspected for hyperemia, pallor, exudate, or hemorrhage. Hyperemia of the conjunctival vasculature may be caused by an allergy, virus, or bacterium. An exudative discharge is often associated with a bacterial infection. The sclera should be evaluated for signs of dilated vasculature, lesions, or icterus, yellowing of the sclera as a result of hyperbilirubinemia often associated with bile duct obstruction or liver disease. The iris should be inspected for lesions and excessive heterochromia.

The **cornea** should be evaluated for signs of opacity, edema, or foreign body. A pterygium is an abnormal growth of conjunctival tissue that may progress to involve the cornea. It is usually triangular-shaped and inflamed, typically occurs on the nasal aspect of the eye, and is found most commonly in tropical climates. Metal foreign bodies in the cornea may cause corneal edema, anterior chamber inflammation, and a rust ring. Rust rings must be removed completely and carefully to minimize the potential for scarring.

Sudden opacification of the cornea can be a sign of increased intraocular pressure. This dulling of the otherwise crystal-clear cornea may indicate an acute angle-closure attack. Acute angle-closure glaucoma is a true ophthalmic emergency and requires immediate treatment. To assess the depth of the anterior chamber, shine a light from the temporal side of the head parallel to the plane of the iris (see FIGURE 8-13). Determine how much of the nasal iris is in shadow. If greater than two-thirds of the nasal iris is in shadow, then a shallow anterior chamber should be suspected (see FIGURE 8-14). Further evaluation of the cornea can include evaluating the sensory component as supplied by cranial nerve V (trigeminal). This is done by dragging a wisp of cotton, from either a cotton ball or the tip of cotton-tipped applicator formed into a point, gently across the corneal surface.

8-6 Pupillary evaluation should include inspection of the pupil for both the direct and consensual response as well as symmetry of size and shape. The direct **pupillary reaction** is performed by

Extraocular movements: movement of the eyes through nine positions of gaze as an assessment of cranial nerves III, VI, and VI

Cornea: the most ventral surface of the eye, appearing as a transparent mound lying directly over the pupil, iris, and anterior chamber

Pupillary reaction: reaction of the pupils when a light is shown into the eyes as an assessment of cranial nerves II and III

FIGURE 8-13 Assessment of the depth of the anterior chamber with the light source projected tangentially over the iris.

Throughout the text, key points are illustrated and important information is highlighted to ensure comprehension and to aid the study of critical material. **Key Terms** are bolded throughout the chapter, and shaded boxes in the margin provide the full definition for student reference and review. A colorful and engaging layout enables easy reading and supports the retention of important concepts. Additionally, almost 600 full-color photographs and illustrations provide valuable insight into proper procedure and accurate anatomy, as well as visual reinforcement of the material.

Video content is also a key element of this valuable resource. Footage of illustrative exams is included with every new print copy of *History and Physical Examination* on the **Companion Website** and embedded in the online, JBL eFolio edition, also available for purchase.

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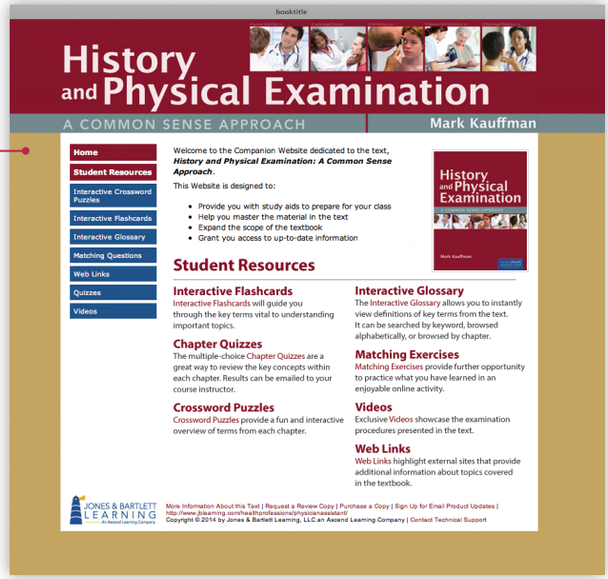
The *History and Physical Examination* **Companion Website** also includes useful study activities, practice quizzes, flashcards, and more. To redeem the Access Code Card available with your new copy of the resource, or to purchase access to the website separately, visit **go.jblearning.com/HPECWS**.



CASE 1	
Maria Gonzales 16-year-old female CC: Ear pain	
___ Addresses patient by name	
___ Introduces self and explains role	
___ Properly washes hands before touching the patient	
___ How can I help you today?	My ear hurts.
Chronology/Onset	
___ **When** did it start?	About 3 days ago.
___ Did you ever have this **before**?	Yes.
___ **When** was that?	It seems like every winter.
___ **How** were you treated?	They gave me an antibiotic.
___ Has it **changed** at all?	It was worse but there was a "pop" and then it wasn't so bad.
Description/Duration	
___ Which **ear** is it?	The right one.
___ Can you **describe** the pain?	It's an ache.
Intensity	
___ How bad is it on a **scale** from 1 to 10?	I'd say a 5.
Exacerbation	
___ What makes it **worse**?	Nothing really.
Remission	
___ What makes it **better**?	Antihistamines seem to help a little.
___ Which one did you take?	Just a Benadryl once yesterday.
___ How many milligrams?	Twenty-Five

In Chapter 4, *The History Flows* and culminating in Chapter 16, *Comprehensive Flows*, **Clinical Cases** provide crucial, applied practice for the foundational content. To foster comfort and repetition, memory tools and **Patient Data Sheets** are included for student use in utilizing the cases, following the CODIERS SMASH FM mnemonic tool presented in Chapter 3 and utilized throughout the resource.

Beginning after Chapter 5, *Introduction to Physical Examination*, and included for each body system and specialized type of exam covered, logical **Physical Exam Flows** are provided for reference and head-to-toe, front-to-back coverage. These valuable tables provide a critical checklist to ensure comprehensive, replicable, and reliable exams.

Qualified professors can also receive the full suite of **Instructor Support Resources**, including PowerPoints, TestBanks, and Instructor's Manual. To gain access to these valuable teaching materials, contact your Health Professions representative through **www.jblearning.com**.

TABLE 6-7 General Assessment and Vital Signs Flow

GENERAL ASSESSMENT AND VITAL SIGNS FLOW
Introduces self and explains that physical exam will now be performed
Washes hands for 15 seconds, turning off water with towel
General Assessment
Level of consciousness: alert, drowsy, stuporous, comatose
Distress: pain, respiratory/cardiac, emotional
Nutritional status: well-nourished, malnourished, increased BMI
Development
Skin coloration: describe general skin tone
Hygiene: describe overall hygiene
Posture/position of comfort: describe posture/position
Vitals
TEMPERATURE—Facilitator: prompt student to discuss
Rectal—one degree above oral
Oral
Axillary—one degree below oral
RESPIRATIONS
Places fingers on radial pulse as distractive technique
Observe respirations through peripheral vision
Calculate rate for 30 seconds and multiply by 2
Student must state, noting
Rhythm: describe the rhythm
Character: inspiration = expiration, shallow, deep
PULSE
Calculate rate—measure for 15 seconds and multiply by 4
Student must state, noting
Rhythm: regular, regularly irregular, irregularly irregular
Character: weak (small), normal, bounding (large)

TABLE 6-7 General Assessment and Vital Signs Flow *(Continued)*

BLOOD PRESSURE
Student must ask patient if he/she has been sitting for 5 minutes
Student must question patient about nicotine/caffeine in the prior 30 minutes
Student must ask patient if there is a restriction to taking bp in either arm
Bare arm
Locate the brachial artery by palpation
Apply cuff with artery marker overlying brachial artery
Apply cuff 2.5 cm proximal to antecubital fossa with correct side down
Demonstrate appropriate size cuff use by evaluating range markers
Inflate while palpating radial artery, note disappearance
Deflate quickly
Place stethoscope head over brachial artery
Place stethoscope with ear pieces facing forward
Reinflate to 20 mmHg above disappearance
Deflate cuff at a rate of 2–3 mm per second
Note first sounds to return—systolic
Note disappearance point—diastolic pressure
Repeat in other arm
SPECIAL CONSIDERATIONS—Facilitator: prompt student to discuss
Ask student to describe ausculatory gap
Ask student to describe test if suspected blood volume loss or syncope
Take in supine, seated, and then standing positions
Define orthostatic hypotension: 20 mmHg fall systolic or 10 mmHg diastolic

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