

Clinical Procedures for Ocular Examination

Fourth Edition



Nancy B. Carlson | Daniel Kurtz

Mc
Graw
Hill
Education

Clinical
Procedures
for Ocular
Examination

NOTICE

The authors and the publisher of this volume have taken care to make certain that the doses of drugs and schedules of treatment are correct and compatible with the standards generally accepted at the time of publication. Nevertheless, as new information becomes available, changes in treatment and in the use of drugs become necessary. The reader is advised to carefully consult the instruction and information material included in the package insert of each drug or therapeutic agent before administration. The advice is especially important when using, administering, or recommending new or infrequently used drugs. The publisher disclaims any liability, loss, injury or damage incurred as a consequence, directly or indirectly, of the use and application of the contents of the volume.

Clinical

Procedures for Ocular Examination

Fourth Edition

NANCY B. CARLSON, OD, FAAO

Professor Emeritus
New England College of Optometry
Boston, Massachusetts

DANIEL KURTZ, OD, PhD, FAAO

Associate Dean of Academic Affairs
Professor of Optometry
Western University of Health Sciences
College of Optometry
Pomona, California

**Mc
Graw
Hill
Education**

New York Chicago San Francisco Athens London Madrid Mexico City
Milan New Delhi Singapore Sydney Toronto

Copyright © 2016 by McGraw-Hill Education. All rights reserved. Except as permitted under the United States Copyright Act of 1976, no part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of the publisher, with the exception that the program listings may be entered, stored, and executed in a computer system, but they may not be reproduced for publication.

ISBN: 978-0-07-184919-7

MHID: 0-07-184919-X

The material in this eBook also appears in the print version of this title: ISBN: 978-0-07-184920-3, MHID: 0-07-184920-3.

eBook conversion by codeMantra
Version 1.0

All trademarks are trademarks of their respective owners. Rather than put a trademark symbol after every occurrence of a trademarked name, we use names in an editorial fashion only, and to the benefit of the trademark owner, with no intention of infringement of the trademark. Where such designations appear in this book, they have been printed with initial caps.

McGraw-Hill Education eBooks are available at special quantity discounts to use as premiums and sales promotions or for use in corporate training programs. To contact a representative, please visit the Contact Us page at www.mhprofessional.com.

Previous editions copyright © 1996, 1991 by Appleton & Lange; 2004 by The McGraw-Hill Companies, Inc.

TERMS OF USE

This is a copyrighted work and McGraw-Hill Education and its licensors reserve all rights in and to the work. Use of this work is subject to these terms. Except as permitted under the Copyright Act of 1976 and the right to store and retrieve one copy of the work, you may not decompile, disassemble, reverse engineer, reproduce, modify, create derivative works based upon, transmit, distribute, disseminate, sell, publish or sublicense the work or any part of it without McGraw-Hill Education's prior consent. You may use the work for your own noncommercial and personal use; any other use of the work is strictly prohibited. Your right to use the work may be terminated if you fail to comply with these terms.

THE WORK IS PROVIDED "AS IS." MCGRAW-HILL EDUCATION AND ITS LICENSORS MAKE NO GUARANTEES OR WARRANTIES AS TO THE ACCURACY, ADEQUACY OR COMPLETENESS OF OR RESULTS TO BE OBTAINED FROM USING THE WORK, INCLUDING ANY INFORMATION THAT CAN BE ACCESSED THROUGH THE WORK VIA HYPERLINK OR OTHERWISE, AND EXPRESSLY DISCLAIM ANY WARRANTY, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. McGraw-Hill Education and its licensors do not warrant or guarantee that the functions contained in the work will meet your requirements or that its operation will be uninterrupted or error free. Neither McGraw-Hill Education nor its licensors shall be liable to you or anyone else for any inaccuracy, error or omission, regardless of cause, in the work or for any damages resulting therefrom. McGraw-Hill Education has no responsibility for the content of any information accessed through the work. Under no circumstances shall McGraw-Hill Education and/or its licensors be liable for any indirect, incidental, special, punitive, consequential or similar damages that result from the use of or inability to use the work, even if any of them has been advised of the possibility of such damages. This limitation of liability shall apply to any claim or cause whatsoever whether such claim or cause arises in contract, tort or otherwise.

Contributors	xi
Preface	xiii
Introduction	xv
Acknowledgments	xix

1 Patient Communication 1

Introduction to Patient Communication	2
Case History	5
Presenting Examination Results to a Patient	11
Verbal Presentation of Your Patient to a Colleague, Preceptor, or Attending Supervisor	15
How to Write a Consultancy or Referral Letter	19
Reporting Abuse	23
How to Write a Prescription for Medication	25

2 Entrance Tests 29

Introduction to the Entrance Tests	30
External Observation	34
Visual Acuity (VA): Minimum Legible	36
Visual Acuity (VA): Minimum Legible Using a LogMAR Chart	43
Visual Acuity (VA): Minimum Legible Using the Massachusetts Visual Acuity Test With Lea Symbols	51
Pinhole Visual Acuity	58
Amplitude of Accommodation: Push-Up Method and Pull-Away Method	60
Color Vision	63
Cover Test	67
Stereopsis	75
Screening Stereopsis Using the Random Dot E and PASS	78
Worth 4 Dot	82
Near Point of Convergence (NPC)	86
Hirschberg Test and Krimsky Test	89
Brückner Test	92

Extraocular Motilities (EOM) 95
Pupils 98
Screening Visual Fields 101
Finger Counting Visual Fields 104
Interpupillary Distance (PD) 107
Summary of Expected Findings 110

3 Refraction 111

Introduction to Refraction 113
Lensometry 116
Keratometry 121
Introduction to the Phoropter 127
Static Retinoscopy 130
Routine Distance Subjective Refraction with
the Phoropter 136
Step-by-Step Procedure for the Routine Distance
Subjective Refraction with the Phoropter 137
I. Monocular Distance Subjective Refraction 138
Initial MPMVA (Maximum Plus to Maximum Visual Acuity) 138
Initial Duochrome (Bichrome, Red-Green Test) 139
The Jackson Cross Cylinder (JCC) Test 142
Second Monocular MPMVA 147
II. Binocular Balance 149
Binocular MPMVA 152
Use of the Trial Frame to Modify a Prescription 156
III. Side Trips from the Routine Distance Subjective Refraction 159
Clock Chart (Sunburst Dial) 159
Jackson Cross Cylinder (JCC) Check Test for Uncorrected
Astigmatism 161
Prism-Dissociated Duochrome Test 162
Sighting-Dominance Check 164
Trial Frame Refraction 165
Stenopaic Slit Refraction 171

Cycloplegic Refraction	174
Delayed Subjective Refraction	177
Convergence Controlled Refraction	179
Binocular Refraction with the Vectographic Slide	181
Humphriss Immediate Contrast Method	185
Infinity Balance	188
Mohindra's Near Retinoscopy	190
Determining the Add for the Presbyope	192
Septum Near Balance	197
Near Refinement of Cylinder Axis and Power Using the Borish Binocular Nearpoint Card	202
Modified Humphriss for Near Refinement of Cylinder Axis and Power	204
4 Functional Tests	207
Introduction to Functional Tests	208
Distance Lateral Phoria by von Graefe Technique	210
Distance Vertical Phoria by von Graefe Technique	213
Horizontal Vergences at Distance	216
Vertical Vergences at Distance	220
Near Lateral Phoria by von Graefe Technique	223
Near Vertical Phoria by von Graefe Technique	227
Horizontal Vergences at Near	230
Vertical Vergences at Near	233
Fusional Vergence Facility at Near	235
Fused Cross Cylinder	236
Negative Relative Accommodation/Positive Relative Accommodation (NRA/PRA)	239
Accommodative Facility	241
Dynamic Retinoscopy: Monocular Estimation Method (MEM)	245
Dynamic Retinoscopy: Bell Retinoscopy	248
Amplitude of Accommodation: Minus Lens to Blur	251

Associated Phoria 253
Maddox Rod Phoria 257
Modified Thorington Phoria 261
4Δ Base Out Test 266

5 Ocular Health Assessment 271

Introduction to Ocular Health Assessment 273
Biomicroscopy (Slit Lamp) 278
Special Slit Lamp Procedures 289
Examination of the Anterior Chamber 290
Eversion of the Upper Lid 292
Corneal or Conjunctival Staining 294
Specular Reflection Technique 297
Sclerotic Scatter Technique 299
Instillation of Drops 301
Gonioscopy 304
Tear Breakup Time 313
Schirmer Tests: Schirmer #1 Test and Basic Lacrimation Test 315
Cotton Thread Test 318
Fluorescein Clearance Test (or “Dye Disappearance Test”) 320
Jones #1 (Primary Dye) Test 323
Direct Ophthalmoscopy 325
Binocular Indirect Ophthalmoscopy 328
Scleral Depression 335
Fundus Biomicroscopy 338
Nerve Fiber Layer Evaluation 341
Retinal Evaluation With the Goldmann 3-Mirror Lens 343
Goldmann Applanation Tonometry 348
Pachymetry 355
Noncontact Tonometry 357
Amsler Grid 363
Tangent Screen 366
D-15 Color Test 370

Brightness Comparison Test	372
Photostress Recovery Time Test	374
Red Desaturation Test	377
Exophthalmometry	380
6 Contact Lenses	385
Introduction to the Contact Lens Examination	387
Contact Lens Case History	390
Contact Lens External Examination	392
Inspection and Verification of Gas Permeable Contact Lenses	396
Base Curve Radius: Radiuscope or Radiusgauge	397
Base Curve Radius: Lensco-Meter	401
Back Vertex Power and Optical Quality	403
Lens Diameter and Optic Zone Diameter	405
Center Thickness	408
Surface Quality	410
Surface Wettability	413
Insertion, Removal, and Recentering of Gas Permeable Contact Lenses	415
Fit Assessment of Gas Permeable Contact Lenses	420
Inspection and Verification of Soft Contact Lenses	426
Back Vertex Power	427
Surface Inspection: Films and Spots	429
Surface Inspection: Tears, Nicks, and Scratches	432
Insertion and Removal of Soft Contact Lenses	434
Fit Assessment of Soft Contact Lenses	439
Insertion and Removal of Scleral Contact Lenses	445
Fit Assessment of Scleral Contact Lenses	449
Over-Refracton: Phoropter	451
Over-Refracton: Spectacle Trial Lenses	453
Evaluation of the Multifocal Contact Lens Patient	456
Distance Over-Refracton	458
Evaluation of the Monovision Patient	460

7 Systemic Health Screening 465

- Introduction to Systemic Health Screening 466
- Blood Pressure Evaluation (Sphygmomanometry) 467
- Carotid Artery Evaluation 473
- Orbital Auscultation 478
- Lymph Node Evaluation 482
- Paranasal Sinus Evaluation 487
- Glucometry 493

8 Cranial Nerve Screening 499

- Introduction to Cranial Nerve Screening 500
- Muscle Field with Red Lens, Ductions, and Saccades 501
- Test for a Paretic Horizontal Muscle 504
- Park's 3-Step Method for a Paretic Vertical Muscle 506
- Dim–Bright Pupillary Test 508
- Near (Accommodative) Response of the Pupil 511
- Pupil Cycle Time 513
- Pharmacological Tests of the Pupil 515
- Trigeminal Nerve Function Test 518
- Facial Nerve Function Test 522
- Screening Tests for Cranial Nerves I, VIII, XI, and XII 525

References 531

Index 561

Robert C. Capone, OD, FAAO

Adjunct Clinical Faculty
New England College of Optometry
Boston, Massachusetts
Staff Optometrist
East Boston Neighborhood Health Center
East Boston, Massachusetts

Marion M.W. Hau, OD, FAAO

Adjunct Clinical Faculty
New England College of Optometry
Boston, Massachusetts
Staff Optometrist
East Boston Neighborhood Health Center
East Boston, Massachusetts

Ronald K. Watanabe, OD, FAAO

Associate Professor of Optometry
New England College of Optometry
Boston, Massachusetts

This page intentionally left blank

It has been 25 years since the publication of the first edition of **Clinical Procedures for Ocular Examination** and 11 years since the publication of the third edition. During that period, health care has undergone numerous changes related to improved technology for testing, changes in insurance coverage that influence tests chosen and time spent with the patient, the addition of electronic health record keeping, and improved privacy for patients. The movement to standardize optometry on a national level continues. The intellectual foundations of optometric practice have been strengthened by an ever-growing body of scientific literature. Consequently, we have updated the reference sections with recent citations and added or modified procedures in accordance with contemporary concepts and knowledge.

One of the key motivations for the 1990 edition of this book was the lack of standardization for many clinical procedures. Books such as this one attempt to alleviate the problem to some degree. Nevertheless, it remains true now as it did at the time of the first, second, and third editions: there is still more than one acceptable way to perform many of the procedures. In some of these instances we have added variations in the step-by-step procedures, clearly indicating that there is a valid, alternate way to perform that step or procedure.

This edition continues the practice of earlier editions of not including highly technical or equipment-specific techniques. To learn to operate these tools, one must refer to the manual that comes with the instrument. We remain true to our primary mission: to describe how to perform a wide variety of useful tests without a large body of theory.

This page intentionally left blank

The purpose of **Clinical Procedure for Ocular Examination** is to provide students and practitioners with detailed step-by-step procedures for a comprehensive battery of techniques used in the examination of the eye. These procedures include tests for assessing the refractive error, the accommodative function, the binocular coordination, and the health of the eyes, monitoring the fit and condition of contact lenses, and screening tests for neurological and systemic health conditions. The book contains detailed, step-by-step instructions on how to perform each technique. For each procedure, the reader is provided with comprehensive information on the purpose of the test, what equipment is needed, how to set up the equipment and the patient properly, and how to record the findings. Expected findings are listed for most tests. The text includes diagrams and photographs to reinforce the descriptions of the techniques.

The emphasis in this book is technical. It provides little in the way of the theory or the background of the tests. Removal of the theoretical discussion leaves a pure, concise description of the techniques and allows the reader to concentrate on the psychomotor mechanics of the procedures. Readers who are unfamiliar with the techniques can use the descriptions in this manual to learn the test procedures with little or no supervision. Readers who are already familiar with the techniques can use this manual to review a test procedure to ensure that they or someone under their supervision is performing it correctly. Mastery of the techniques and interpretation of the findings, however, cannot be obtained solely through the use of this book, but requires supervised clinical practice as well as a thorough understanding of the theoretical basis for each technique. Included in the References section at the end of the book are sources that will provide the reader with the necessary theory and background for each of the procedures.

The first chapter of the book deals with patient communication, clearly the most important aspect of patient care. Good communication improves patient outcomes and makes the encounter more enjoyable for both the patient and the doctor. The first time the patient and doctor meet is usually during the case history, a critical phase of the examination. In addition to establishing rapport with the patient and setting

the tone for the exam, the history marks the beginning of the doctor's diagnostic thought process. Knowing the patient's concerns, the examiner can now begin to develop his examination strategy. Based on the patient's chief complaints and routine background information gathered in the case history, the examiner can decide which phases of the examination to concentrate on and which problem-specific testing should be done.

The second chapter describes the entrance tests. These techniques are the first procedures performed following the case history. They are relatively simple procedures that use minimal, primarily handheld equipment. They screen for problems in each of the three major problem areas: refraction, visual function, and health. Most of the entrance tests screen for problems in more than one of these three areas. Thoughtful interpretation of the results of the entrance tests can greatly increase the efficiency of the examination. Augmented by the information gathered in the case history, entrance tests data aid the examiner in pinpointing the patient's problem areas and appropriately directing the examination strategy.

Chapters 3 through 5 correspond to the problem areas of refraction, visual function, and ocular health. Traditionally, a complete ocular examination consisted of comprehensive testing in each of these three areas. The information thus obtained was referred to as the "minimum defined data base." If a problem was discovered through these procedures, additional problem-specific tests were performed to enhance further evaluation. In this age of managed health care, providers no longer have the luxury of performing a battery of procedures on every patient simply to collect data. It is important to detect problems quickly, with a minimum number of tests, allowing time to probe each problem with more specific testing.

In Chapters 3 through 5 we have defined tests that can be considered "core" tests. Core tests can be viewed as providing the center or nucleus of the exam. They supply the examiner with enough information to detect but not to diagnose the vast majority of ocular, binocular, neurological, or visual anomalies, even in the absence of patient symptoms. The examiner's philosophy and the demographic characteristics of the patient will influence what tests will be included in the core tests. The traditional minimum defined data base of the past included more tests than those currently defined as core tests. This reduction in the number of procedures included in a complete examination is reasonable, since the minimum defined data base already contained some redundancy. For this reason, excluding certain tests will not affect the quality of information obtained. However, examiners must be aware of the increased importance of screening for unexpected problems, and diligently follow up with problem-specific testing in the case of any abnormal test results.

Each of these three chapters also describes a wide variety of problem-specific tests, by which the examiner explores a specific area of concern in detail. These tests are not done on a routine basis, but are selected on the basis of the patient's case history and the results of other testing. Problem-specific tests are not placed in a separate chapter. They are included in the chapter corresponding to their problem area.

Included within these chapters are flowcharts that illustrate how tests might be grouped or sequenced in order to promote examination efficiency. These charts do not represent the only appropriate sequencing of the techniques, but they do illustrate one sequence for efficiently combining the procedures.

Separate flowcharts are presented for the most commonly applied core entrance tests, refractive tests, and ocular health assessment tests. Since functional testing and problem-specific testing are almost always customized to the patient and depend strongly on the individual patient's problem or complaint, there is no standard flowchart for these parts of the ocular examination.

Individual flowcharts could not possibly work for all patients. Rather, they are intended to provide a standard sequence of testing for the majority of patients seen in most examiners' practices. This standard test order can be compared to the itinerary of a trip. The traveler plans the trip from start to finish along a standard pathway, or "main route." Similarly, the flowcharts depict a standard itinerary of ocular tests that lead from the beginning to the end of the routine exam.

However, many patients need problem-specific tests, which can be compared to points of interest along the main route. When indicated, the examiner takes a "side trip." That is, he performs certain tests that are supplemental to the main route. The flowcharts and text show when side trips are indicated. Once the necessary side trip is completed, the examiner should usually return to the main route and continue the examination from there. For the sake of examination efficiency, however, some side trips may be postponed.

Chapter 6 concentrates on the procedures necessary for basic fitting and monitoring of contact lenses. These procedures are considered problem-specific since they are useful only for contact lens patients. It is possible to quickly and efficiently incorporate these procedures into a comprehensive ocular examination as shown in the flow chart at the beginning of Chapter 6.

Chapter 7 deals with procedures used to screen a patient's systemic health. The eye care professional is often the patient's entry point into the health care system. Therefore, they have the responsibility to evaluate

the overall health of the patient. The examiner may select to perform certain procedures based on the patient's age, medical history, or presenting symptoms or as the result of information gathered during the comprehensive examination. Alternately, the examiner may prefer to perform these screening procedures routinely on all patients. Patients with abnormal results should be referred to the appropriate health care provider for more thorough evaluation and diagnosis.

Chapter 8 concentrates on procedures used to assess the cranial nerves when screening for neurological disorders. These techniques are rarely used for routine screening, but they are particularly helpful when a problem is suspected on the basis of the patient's case history or ocular examination findings. Many of these screening procedures should be performed as side trips from corresponding entrance tests.

Throughout the text, the masculine form of the third person singular pronoun is used. This form is used for the sake of simplicity, and applies equally to men and women without prejudice.

We wish to thank our students who have used the numerous outlines, flowcharts, PowerPoint presentations, and handouts that are the foundation of this book. Through their questions they helped us determine the appropriate level of detail needed to describe each procedure. We owe a special debt to Dr David Heath and Dr Catherine Hines, who invested countless hours and drafted much of the text for the first three editions. We also wish to thank Mr Mirza Hasanefendic, Dr Robert Gordon, Dr Tiffenie Harris, Mr Ed MacKinnon, and Dr Terrence Knisely for their excellent photography; Dr Susan Baylus for her work on many of the computer graphics; Dr Patti Augeri, Dr Bina Patel, and Dr Maureen Hanley, who were involved in developing the laboratory manual that was the foundation for Chapter 5, Rudolf Mireles, PharmD, for help with preparation of the section on “How to Write a Prescription for Medication,” and Ms Monique Tessier, Ms Lori Rees, and Dr Ida Chung of the Western University of Health Sciences College of Optometry for countless hours fixing last-minute emergencies during the preparation of the manuscript for the fourth edition.

We would also like to acknowledge the sacrifices, support, and contributions of our families: Tom Corwin, Brian Carlson, Adam, Esther, and Nathan Kurtz, and Kyra and Lynne Silvers.

This page intentionally left blank

Patient Communication

**Nancy B. Carlson, OD, FAAO, and
Daniel Kurtz, OD, PhD, FAAO**

Introduction to Patient Communication

Case History

Presenting Examination Results to a Patient

Verbal Presentation of Your Patient to a Colleague,
Preceptor, or Attending Supervisor

How to Write a Consultancy or Referral Letter

Reporting Abuse

How to Write a Prescription for Medication

INTRODUCTION TO PATIENT COMMUNICATION

Communicating with patients is the most important aspect of patient care. Good patient communication facilitates the examination process, improves the accuracy of diagnosis, improves patient compliance, decreases patient complaints and malpractice claims, and makes every patient encounter more enjoyable for the clinician as well as for the patient. Communication is a skill that can be learned and improved over time.

From the time that the patient calls for an appointment until the patient leaves the office, all staff need to know that the patient is the most important person in the room and they must be treated with dignity and respect.

There are many opportunities to demonstrate good patient communication in the care process starting with the case history. Other communication opportunities presented in this chapter include presenting the findings to the patient at the end of the examination, presenting the case to colleagues or to an attending doctor, writing consultation and/or referral letters, reporting abuse, and writing a prescription for medication.

Case history is the most important procedure in the entire repertoire of examination procedures, and it is one of the most difficult to learn. History taking can be mastered only after the acquisition of a broad base of knowledge and after years of clinical experience. An experienced and knowledgeable clinician often can determine the diagnosis from the history alone. Conversely, the novice is frequently overwhelmed by the information gathered in the case history and is rarely able to effectively gather and use the relevant information in the diagnostic process. It is beyond the scope of this book to provide sufficient information for a novice clinician to conduct a proficient, comprehensive case history. Rather, the components of the case history are presented to illustrate the main parts of a history for a typical primary care examination and for a typical follow-up examination.

The case history is usually conducted at the beginning of the examination, and is the time for the clinician and patient to become acquainted. The clinician must present himself to the patient as a caring and empathetic individual if he expects the patient to be forthcoming about his problems and to comply with advice given. At the same time, the clinician begins the diagnostic thought process by asking the patient appropriate questions to determine the potential causes for each of the patient's symptoms. The information is then used in deciding which

procedures the clinician will use to confirm or rule out each potential diagnosis. During the case history the clinician also has an opportunity to begin educating the patient about his visual function and about his ocular and general health.

The case history for a typical primary care examination is divided into several parts: the Chief Complaint or History of the Present Illness (HPI), Past Medical and Ocular History including medications and allergies, Review of Systems, Family History, Social History, and the Summary. In the beginning of the history, the clinician asks open-ended questions to assess the patient's reason for seeking care (the history of the present illness/chief complaint) and to ascertain the visual needs of the patient's daily life. If the patient does not initially volunteer a complaint, it is wise to ask key, probing questions about his vision and visual function and visual efficiency.

The Past Medical and Ocular History portion of the history consists of a series of questions to determine if the patient is at risk for any of a variety of ocular, systemic, or neurological disorders. The clinician asks about the patient's previous ocular history, his medical history, and his family's ocular and medical history. The clinician also gives the patient a list of symptoms of common eye problems to find out if the patient has ever experienced any of them. Some clinicians gather this information in a written questionnaire that the patient fills out prior to the examination. Although this is an efficient method of data collection, it must be followed by a conversation between the clinician and the patient to establish a doctor-patient relationship and to be certain that all relevant information was gathered.

Finally, the case history concludes with a brief recapitulation, or summary, of the patient's chief complaint or complaints, but this time in the clinician's words. This summary ensures both the clinician and the patient that the clinician understands the patient's concerns, and gives the patient an opportunity to add anything that may have been missed. It also gives the clinician an opportunity to start the process of patient education that will be concluded at the end of the examination.

The case history can be modified for a problem-focused examination for a previously seen patient by omitting the information that has been gathered in the previous primary care examination and by asking only the questions that are relevant to the patient's reason for the visit. A problem-focused case history should include the patient's reason for visit, questions about the symptoms that will help the clinician in the differential diagnosis process, and a summary of the patient's complaints in the clinician's words.

After the examination is completed, the clinician must summarize the findings of the examination for the patient along with recommendations for appropriate care, referrals, and follow-up care. It is important to relate the examination findings back to the patient's reason for visit or chief complaint.

CASE HISTORY

Purpose

- To establish a caring relationship with the patient, showing compassion, empathy, and respect for the patient.
- To gather information about the patient's chief complaint, visual function, ocular and systemic health, risk factors, and lifestyle.
- To begin the process of differential diagnosis.
- To begin the process of patient education.

Setup

Prior to starting the formal case history, the doctor should welcome the patient, show the patient where to put his coat and belongings during the examination, introduce himself to the patient, and exchange a few pleasantries with the patient (eg, How about the Patriots/Bruins/Celtics/Red Sox? What do you think about the weather we've been having?). Be sure that the patient is comfortable where he is seated and that the overhead light is not shining in the patient's eyes. The doctor should be seated at the same height as the patient, in a position that makes it easy to maintain eye contact with the patient and to facilitate conversation. When using electronic health records, a tablet computer will facilitate good communication, as shown in **Figure 1-1**. Although the case history is usually done at the beginning of the examination, data may be added to it as information is gathered during testing. Patients sometimes reveal more information as they become more comfortable with the doctor.

Case History Components for an Adult Primary Care Examination

- **History of the Present Illness (HPI)**
 1. Chief complaint.
 - a. Initiation: Ask the patient about the reason for his visit with a question such as:
What brought you in today?"
What problems are you having with your eyes?
How can I help you today?
What is the main reason for today's eye examination?



FIGURE 1-1. The doctor takes the case history and records it on a tablet computer, enhancing his ability to maintain eye contact with the patient.

b. Elaboration of the chief complaint (FOLDARQ).

For each complaint the patient presents, ask for additional information using any of the following qualifiers that will help you in your differential diagnosis of each complaint:

Frequency: How often does this occur? Have you had anything similar in the past or is this the first time?

Onset: When did the problem begin?

Location: Where is the problem located? (eg, OD, OS? At distance, at near?)

Duration: How long do your symptoms last?

Associated factors: What other symptoms do you experience with this problem? Does the symptom occur with your glasses or only when you do not wear them? Does this happen only when you wear your contact lenses or also when you are not wearing your contact lenses?

Relief: What seems to make your symptoms go away?

Quality: On a scale of 1 to 10, how would you rate the severity of your symptoms?

2. Visual efficiency, if not already covered in the chief complaint.

“Can you see clearly and comfortably both far away and close up for all your visual activities?”

After hearing the patient’s description of his complaint(s), summarize for him what you have heard.

• **Past Medical History (including past eye history)**

1. Patient’s ocular history.

- a.** “When was your last eye examination? By whom? What was the outcome of that examination?”
- b.** Corrective lenses history.

If the patient wears glasses, ask:

How long have you been wearing glasses? Are they for distance, near, or both? Can you see clearly and comfortably with them?

When were your glasses last changed?

If the patient does not currently wear glasses, ask, “Have you ever worn glasses? What were they for? When did you wear them? When and why did you stop wearing them?”

Do you wear contact lenses? (For further contact lens history, see Chapter 6.)

2. Patient’s medical history.

Have you ever had any medical attention to your eyes? Any surgery, injuries, or serious infections?

Have you ever worn an eye patch?

Have you ever used any medication for your eyes?

Have you ever been told that you have an eye turn or a lazy eye?

Have you ever been told that you have cataracts, glaucoma, or any other eye disease?

How is your general health?

When was your last physical examination? By whom?

Are you currently under the care of a physician for any health condition?

Have you ever been told that you have diabetes, high blood pressure, thyroid disease, heart disease, or any infectious disease?

Are you taking any medications? If yes, what medication, how long have you been taking the medication, what is it for, and what is the dosage?

Do you have any allergies? If yes, to what, what are your symptoms, and how are your allergies treated?

3. Review of Systems (ROS).

The Review of Systems is a list of organ systems that can help the clinician determine the state of the patient's general health. Included in this list are:

Constitutional

Eyes

Ears, nose, and throat

Respiratory

Cardiovascular

Gastrointestinal

Genitourinary

Neurological

Psychological

Musculoskeletal

Skin

Allergic/immunological/lymphatic/endocrine

4. Symptoms of common eye problems.

Have you experienced any of the following: flashes of light, floaters, halos around lights, double vision, frequent or severe headaches, eye pain, redness, tearing, or a sandy, gritty feeling in your eyes?

• Family History

Has anyone in your family had cataracts, glaucoma, or blindness? Has anyone had an eye turn or lazy eye? If yes, who, when, for how long, and what was the treatment?"