For Joyce
This book will not make a diagnostician of anyone. Its purpose is to acquaint nonphysicians with the nature and nomenclature of the medical history and physical examination as currently performed and recorded by physicians. Although directed principally to medical transcriptionists, it should also be helpful to medical secretaries, nurses, clinical psychologists, social workers, insurance clerks, lawyers, and other nonphysicians who are called upon to handle or interpret medical records.

The importance of the history and physical examination in medical practice can hardly be overstated. Medicine might be defined as an art and science whose goals are the prevention, identification, and treatment of human diseases, including the results of injury, developmental abnormalities, and degenerative and malignant processes. Some diagnosis, at least general or provisional, must precede any rational attempt at treatment. Since both a review of the patient’s complaints and some kind of systematic examination are basic and indispensable elements in the diagnostic process, it would be hard to imagine an instance of medical treatment to which history and physical are wholly irrelevant. Moreover, history and physical examination are often performed when no disease is suspected and no treatment is contemplated, as in a routine health checkup or a pre-employment physical.

Whether the history and physical are narrowly restricted to the area of a specific problem, such as a cut finger, or are performed on an elaborate and exhaustive scale, a permanent record must be preserved in writing in either printed or electronic form. The written report of a history and physical examination not only serves to supplement the memory of the treating physician but may also provide essential information to other physicians months, years, or decades later. In addition, it may assume great legal significance, documenting the thoroughness and appropriateness of the physician’s evaluation and the accuracy of the diagnosis, providing a basis for health insurance benefit payments, or supplying data for disability determination or workers’ compensation.

Medicine, like every other profession, has its own intricate and arcane idiom, some of it formal and recorded in dictionaries and textbooks, some informal, colloquial, and evanescent. Much of this latter kind of jargon pertains to the art of physical diagnosis and is used by physicians in recording historical details and physical findings. A considerable part of this jargon consists of formal terms used in unconventional ways. (For example, the phrase no pathology in the pelvis has nothing to do with either the formal subject matter of the
science of pathology or the bones collectively termed the pelvis in anatomy.) Hence, even a person with a thorough understanding of basic medical terminology and access to medical dictionaries and reference works may find some clinical records misleading or unintelligible. The fact that the art of diagnosis has its own special brand of logic, not easily followed by persons who have never practiced medicine, adds further to the difficulties of the lay person who must transcribe medical records from dictation or peruse them in quest of information.

Several features combine to make this book a valuable resource for transcriptionists and other nonphysicians who deal with medical records. I have described each step of the history and physical examination in a separate chapter. Excerpts from a variety of H&P reports appear in shaded boxes immediately following the text to which they refer. In addition, for reference and comparison, relevant words and phrases appear in side bars labeled “For Quick Reference.” Throughout the book, medical jargon is discussed and defined on an equal footing with formal terminology. Words and phrases not found in standard references are defined in a glossary at the end of the book.

If medical transcriptionists and health information management personnel find this book helpful, let them take it as a small return for the unpayable debt that physicians and their patients owe these unsung and generally invisible but diligent and indispensable members of the healthcare team.
This third edition of *H&P: A Nonphysician’s Guide to the Medical History and Physical Examination* has been expanded to include a variety of exercises contributed by educators. At the end of each chapter are multiple choice, fill in the blank, and short answer questions. There are also learning activities designed for individuals as well as small and large groups. As a study technique, it is a good idea to review the exercises at the end of each chapter before reading the chapter. If you are an independent study student, don’t ignore the group activities; you may be able to adapt some of them to your situation. See the note to independent study students below.

The following headings are a guide to the kinds of questions and activities included:

- Review and Summarize
- Pause and Reflect
- Relate and Remember
- Collaborate and Share
- Explain and Learn
- Relax and Play
- Generalize and Apply
- Compare and Contrast
- Extrapolate and Project

Some activities will require “going outside the text” for more information. Others will draw on your knowledge of anatomy, medical terminology, and disease processes. If you have not yet studied these topics, or are studying them concurrently with this text, you may have a little extra work to do. None of the activities, however, require that you be proficient in medicine in general or any specialties in particular. Since many of the activities involve collaboration with classmates, it is likely that your combined knowledge and experiences will suffice.

The exercises in this book may at first appear redundant, but there is a reason for this. Every attempt has been made to address different learning styles; thus, multiple choice, fill in the blank, and short answer questions may all seem to relate to the same general topic or point. Both the repetition and the different approaches to the same information help you to remember important points. Activities may be similar as well. Group activities may build on activities designed for individual students. Time and environment may limit completing...
all activities; it is not expected that an instructor require students to complete every question and activity at the end of every chapter.

A Special Note to All Students. The questions and activities in this book have been designed to appeal to a variety of learning styles, one of which will work best for you. However, no single method of learning will work well for any individual all the time, and no single method of learning is suited to all material to be learned. All students use multiple learning styles to evaluate, digest, and incorporate new information into their experience and make it their own. For most, however, one style will predominate and be more comfortable than others. You are encouraged to stretch yourself beyond your comfort zone and attempt to answer all questions in these exercises, regardless of their form, and to participate in all the activities assigned by your instructor. In that way, you will ensure maximum retention and understanding of the material you are studying. A side benefit will be that you will teach yourself new learning techniques that will improve your performance in all your areas of study and enhance lifelong learning.

Note to Independent Study Students. Many of the group activities are easily modified to allow completion by an individual working alone. If multiple parts of an activity are divided among several students, complete all the tasks yourself. If you are to discuss or explain your findings to another person or to the group, write your explanation in a journal. You will be able to use this journal later as a study aid. For role-play activities or games, involve friends or family members. If you have Internet access, you can locate other independent study students at a networking Web site for medical transcriptionists and invite them to participate in on-line versions of group activities.

Note to Instructors. Answers to objective questions are included in the back of the textbook. Some of the questions and many of the activities are more open-ended and more subjective. For some of these, some guiding criteria are included. Others are purely subjective and there is no “right” answer. Many of the activities involve bringing in supplies (plain brown paper bags, sheets of butcher paper, colored pencils or crayons, colored dots or stars). When you assign a chapter to be read, you may want to assign the questions for the individual student as homework and plan for the group activities for the next class
meeting. You can have the students themselves bring in any necessary supplies, or you may want to start the term with these supplies on hand in the classroom.

You are encouraged not to skip over the more participatory activities. Educational research has shown that these types of activities are the most successful for many if not most learners. In general, the activities included under the headings “Generalize and Apply” and “Extrapolate and Project” will be more difficult but will also be a sure gauge to whether (and how much) the students are actually incorporating the material into their experiences and fund of knowledge.

For the group activities, students should be encouraged to change groups and work with different students rather than always being in the same group with the same three or four people. Have students draw their group number from a box or bag. If you have five groups of five students, for example, write number 1 on five small pieces of paper, then 2, 3, and so on, up to 5. Mix the pieces up in a bag and let the students draw. The number they draw is the number of the group.

Another way to sort the students into groups is to use playing cards. Use the Ace, King, Queen, Jack, and 10 from multiple decks, five decks for five groups. Shuffle all the cards together and let the students draw a card. All the Aces become one group, the Kings another group, etc. Similarly, if you wanted only four groups, you could use one deck containing only the number of students you have in class and equal numbers of each suit. Then, all the hearts would go in one group, clubs in another, or use colored pieces of paper or similar objects (like paper clips, pencils, rubber bands, erasers) all placed into a bag from which each student draws or object. Like colors or like objects form a group.

Students, and you, may feel awkward and uncomfortable when first carrying out some of these activities, but soon they will be an important part of your classroom routine and all of you will look forward to them.

*Health Professions Institute*
*Ellen Drake, CMT*
*Georgia Green, CMT*
*Linda Campbell, CMT*
Art Acknowledgments

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The eyes are subject to many acute and chronic diseases, some of which can threaten vision. Moreover, the eyes register or reflect many systemic disorders such as arteriosclerosis, diabetes, thyrotoxicosis, and diseases of the nervous system. Hence they deserve attentive examination. Unless some historical point has drawn particular attention to one or both eyes, the physician’s evaluation will usually be limited to an inspection of the lids and lashes and the parts of the eye exposed between them, a test of the pupillary light reflexes, a rough check of ocular movements and visual fields, and an inspection of the ocular fundi. A test of vision is often included. All of these procedures can be performed quickly and easily with standard equipment, but several of them require the cooperation of the patient.

Normally the patient sits upright for the eye examination, if possible. The orbital margins are inspected for swelling or ecchymosis, and may be palpated for tenderness if any clue to recent trauma is noted. The lids are observed for evidence of deformity, swelling, discoloration, masses, crusting, or disorders of the tear glands and ducts. Bulging or protrusion of one or both eyes (exophthalmos) can result from hyperthyroidism or orbital disease.

<table>
<thead>
<tr>
<th>conjunctiva</th>
<th>cornea</th>
<th>globe</th>
<th>limbus</th>
<th>meibomian gland</th>
</tr>
</thead>
<tbody>
<tr>
<td>glass eye, ocular prosthesis</td>
<td>presently wearing contact lenses</td>
<td>right eye (OD)</td>
<td>left eye (OS)</td>
<td>both eyes (OU)</td>
</tr>
<tr>
<td>inner, nasal canthus</td>
<td>outer, temporal canthus</td>
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</table>

The left eye is swollen nearly shut and the lids are deeply discolored. Pulpation of the orbital rim discloses no skeletal tenderness or crepitus. Periorbital ecchymosis, black eye, raccoon eye(s) exophthalmos thinning of the lateral thirds of the eyebrows enophthalmos, hollow, sunken eyes narrowing of the palpebral fissures lagophthalmos symblepharon ptosis, lid lag, epicanthal folds, ectropion, entropion (marginal) blepharitis, crusting of the lids, pediculosis of the lashes petechiae of the palpebral conjunctiva xanthelasma stye, hordeolum, pustule dacryoadenitis, dacryocystitis chalazion, meibomian cyst, tarsal cyst decreased blinking

**Learning Objectives**

After careful study of this chapter, you should be able to:

- List the major components of a routine eye exam.
- Classify eye exam findings by the ocular structures they describe.
- Describe the method by which a lesion on the inner eyelid can be detected.
- Explain pupillary light reflex testing.
- Describe the method by which visual fields are assessed.
- Name the principal structures of the optic fundus and describe the role of the ophthalmoscope in their examination.
- Identify systemic conditions that can be diagnosed by examination of the eye.
The anterior chamber of the eye—the part in front of the pupil—is easily studied with the help of a hand lamp. The physician looks for opacities in the cornea and anterior chamber, abnormalities of the iris, and irregularities in the shape of the pupil, incidentally observing whether the pupil constricts when light is shown directly into the eye. This procedure also serves as a test for photophobia (abnormal sensitivity to light). A check of the accommodation reflex may also be made by asking the patient to look at a distant object and noting whether the pupils constrict. Astigmatism, a warping of the cornea out of its expected spherical form, can sometimes be detected by noting distortion in the reflection of some regularly shaped object on the cornea, but is more precisely determined by vision testing with refracting lenses designed for the purpose which only an ophthalmologist would normally have on hand. The location of a lesion of the cornea or iris is indicated by the hour position to which it would be nearest if the eye were a clock dial (e.g., 5 o’clock).

Abnormalities of the white of the eye can be due to discoloration or disease of the sclera or of the overlying conjunctiva, usually the latter. Mild or early jaundice is typically more evident in the scleras than in the skin. Conjunctival swelling and discharge or lacrimation (excessive tearing) are noted, as well as the degree and

The scleras are deeply icteric, jaundiced. blue scleras episcleritis, pterygium, pinguecula anterior staphyloma chemosis, edema, swelling of the conjunctiva Bitot spots ciliary injection, limbal flush cobbledstoning of the palpebral conjunctiva conjunctival injection, hyperemia, erythema, congestion, redness conjunctivitis: allergic, phlyctenular, vernal, epidemic, purulent a small (sub)conjunctival hemorrhage at the inner canthus of the left eye profuse lacrimation, watery epiphora xerophthalmia copious mucopurulent discharge
distribution of any redness. Very thin scleras, such as occur in some connective tissue disorders, appear blue.

Imbalance of the **extraocular muscles** may or may not be readily apparent. Imbalances are called tropias when the eyes cannot be made to look in the same direction, phorias when there is a tendency to deviation that the patient habitually controls so as not to see double. Even a slight degree of tropia can sometimes be detected by observing whether the reflections of a handheld lamp appear at corresponding points on the two corneas. Tropias and phorias can also be demonstrated with the cover test. The patient gazes steadily at a distant object and the examiner covers first one eye and then the other, noting whether one or both eyes swing into a different position immediately after being uncovered. This test depends on intact vision in both eyes; however, in an uncorrected tropia, vision is eventually lost in one eye.

---

The **visual field** of an eye is that part of the space before it that it can see while held motionless. Abnormalities of visual field, which can be caused by retinal or neural disease or injury, represent partial loss of vision in the form of blind spots (scotomata) or narrowed range of vision. Visual fields can be roughly tested by the confrontation method. The subject is instructed to gaze at the examiner’s nose...
while first one eye and then the other is covered. The examiner moves a finger or a light from the side and then from above and below into the subject’s range of vision and the subject reports when the object first becomes visible. If the examiner in turn gazes at the subject’s nose (and if the examiner’s own visual fields are normal), both should see the object at the same time. More elaborate equipment is needed for more precise mapping of visual fields.

The optic fundus is the portion of the interior of the eye that can be seen by an examiner looking through the pupil with an ophthalmoscope, a handheld instrument with a light source and a set of magnifying lenses that can be quickly changed. The principal features of the fundus are the retina, the optic disk or nerve head, and branches of the central retinal artery and vein. Retinal and optic nerve disease, as well as the effects of systemic conditions such as diabetes, arteriosclerosis, and hypertension, are readily observed in the fundus, provided that the examiner’s view is not blocked by an opaque lens (cataract) or a hemorrhage or foreign body within the eye.

The examiner adjusts the instrument to compensate for visual deficit (refractive error) in the subject’s eye. Since the strength (in diopters) of the lens being used can be read from a scale on the ophthalmoscope, this examination serves as a rough measure of visual acuity. Sizes and distances in the fundus can be measured by comparison with the diameter of the disk. Edema of the disk (choked disk) is measured by the difference between lens settings needed to focus on the disk and on the rest of the fundus. If the pupil is very small it may be dilated with drops in preparation for ophthalmoscopic examination.

Vision testing is usually performed with the familiar Snellen wall chart for far vision and a set of Jaeger test types for near vision. The subject reads the lowest (smallest) row of letters that are legible on the wall chart at a distance of 20 feet, and this performance is expressed as a fraction of normal. Thus 20/20 vision indicates normal far visual acuity, while 20/40 means that, at a distance of 20 feet, the subject can see no letters smaller than those that a normal person can see at 40 feet.

For near vision a card bearing a few lines of print in a standard type is held as close to one eye as possible and gradually moved away from it. The examiner notes the distance from the eye at which the subject is first able to read the print and the distance beyond which it can no longer be read. For more precise measurement of near vision, the card may contain various sizes of type. Far and near vision testing
is generally performed on each eye separately and on both eyes together. A subject who wears glasses is tested both with and without them.

**Color vision** can be tested by a variety of methods. The most sophisticated of these are the Ishihara pseudoisochromatic plates, which make it virtually impossible to feign color-blindness and allow identification of the type of color-blindness that is present.

Certain other simple diagnostic maneuvers may be dictated by circumstances. The inner surface of the upper lid can more readily be examined if it is exposed by inversion of the lid over a cotton-tipped applicator. Fluorescein dye can be instilled in the eye and the cornea examined for ulcers or abrasions with a cobalt blue light, which causes minute collections of dye to show up clearly as brilliant yellow-green patches.

Firm palpation of the eyeball through the closed lids (moderately uncomfortable and slightly dangerous) can reveal undue hardness, such as occurs in acute and chronic glaucoma. In some settings, tonometry is a routine part of the examination of persons over 40. More sophisticated and elaborate examinations of the eye belong within the province of the ophthalmologist.

<table>
<thead>
<tr>
<th>For Quick Reference</th>
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<tbody>
<tr>
<td>profuse lacrimation</td>
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<tr>
<td>pterygium</td>
</tr>
<tr>
<td>ptosis</td>
</tr>
<tr>
<td>purulent conjunctivitis</td>
</tr>
<tr>
<td>pustule</td>
</tr>
<tr>
<td>raccoon eye(s)</td>
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<tr>
<td>red-green color-blindness</td>
</tr>
<tr>
<td>redness</td>
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<tr>
<td>retinal pallor</td>
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<tr>
<td>retinal detachment</td>
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<tr>
<td>retinal edema</td>
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<tr>
<td>retinitis pigmentosa</td>
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<tr>
<td>right sixth nerve palsy</td>
</tr>
<tr>
<td>ripe cataract</td>
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<tr>
<td>rotatory nystagmus</td>
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<tr>
<td>Roth spots</td>
</tr>
<tr>
<td>rust ring</td>
</tr>
<tr>
<td>sclera (pl. scleras, sclerae)</td>
</tr>
<tr>
<td>scotoma</td>
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<tr>
<td>silver wire effect</td>
</tr>
<tr>
<td>silver wiring</td>
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<tr>
<td>sixth cranial nerve</td>
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<tr>
<td>skeletal tenderness</td>
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<tr>
<td>small blot hemorrhage</td>
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<tr>
<td>soft exudates</td>
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<tr>
<td>star figure</td>
</tr>
<tr>
<td>status post iridectomy for glaucoma</td>
</tr>
<tr>
<td>steamy cornea</td>
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<tr>
<td>stepping of vessels</td>
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<tr>
<td>stye</td>
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<tr>
<td>subconjunctival hemorrhage</td>
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<tr>
<td>subhyaloid hemorrhage</td>
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<tr>
<td>sunken eyes</td>
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<tr>
<td>superior rectus muscle</td>
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<tr>
<td>superior oblique muscle</td>
</tr>
<tr>
<td>symblepharon</td>
</tr>
<tr>
<td>tapering</td>
</tr>
<tr>
<td>tarsal cyst</td>
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<tr>
<td>temporal canthus</td>
</tr>
<tr>
<td>temporal deviation</td>
</tr>
<tr>
<td>thinning of lateral thirds of eyebrows</td>
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<tr>
<td>tremulous iris</td>
</tr>
<tr>
<td>trochlear nerve</td>
</tr>
<tr>
<td>tunnel vision</td>
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<tr>
<td>2-diopter choke</td>
</tr>
<tr>
<td>uveitis</td>
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<tr>
<td>vascular lesions</td>
</tr>
<tr>
<td>vernal conjunctivitis</td>
</tr>
<tr>
<td>vertical nystagmus</td>
</tr>
<tr>
<td>watering of eyes</td>
</tr>
<tr>
<td>xanthelasma</td>
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</tbody>
</table>

| normal vision, emmetropia         amaurosis, blindness                             |
| myopia, nearsightedness           hypermetropia, farsightedness                  |
| amblyopia                         presbyopia                                     |
| red-green color-blindness         Ishihara pseudoisochromatic plates          |

| corneal ulcer                        dendritic, herpetic keratitis               |
| Examination of the cornea with fluorescein reveals a deep abrasion at 4 o’clock. |
| There is a deeply embedded foreign body in the center of the left cornea, with a rust ring. |
| No foreign bodies are noted on the palpebral conjunctiva or on the globe. |
Exercises for Chapter 19

**Review and Summarize**

**A. Multiple Choice**

___ 1. Exophthalmos may be diagnostic of 
   a. Hypertension. 
   b. Migraine headache. 
   c. Diabetes mellitus. 
   d. Thyroid disorder.

___2. The sclerae are normally what color? 
   a. Blue. 
   b. White. 
   c. Yellow. 
   d. Red.

___3. Signs of severe diabetes, arteriosclerosis, and hypertension may be noticeable during what portion of the eye exam? 
   a. Fundus examination. 
   b. Visual field examination. 
   c. Scleral examination. 
   d. Extraocular examination.

___4. A person with 20/100 vision 
   a. Sees at 20 feet what a person with normal eyesight sees at 100 feet. 
   b. Sees at 100 feet what a person with normal eyesight sees at 20 feet. 
   c. Can see for 20 feet clearly in the left eye. 
   d. Can see for 20 feet clearly in the right eye.

**B. Fill in the Blank**

1. Blind spots in the visual fields are known as ________________________.

2. Tonometry is routinely used by eye specialists to check for the presence of ________________________.

3. ________________________ is a green dye used to detect ulcers or abrasions in the eye.

4. Photophobia is ________________________ to light.

5. The two types of vision tests are ________________________ and ________________________.
C. Short Answer

1. Write a short definition of the following terms. If you can, condense the definition into just a few words or a single synonym that you feel more comfortable with.

   a. Opacity____________________________________________________
   b. Prosthesis____________________________________________________
   c. Chalazion____________________________________________________
   d. Lacrimation____________________________________________________
   e. Nystagmus____________________________________________________
   f. Myopia____________________________________________________
   g. Hyperopia____________________________________________________
   h. Astigmatism____________________________________________________
   i. Strabismus____________________________________________________
   j. Accommodation reflex____________________________________________________
   k. Hemianopsia____________________________________________________
   l. Presbyopia____________________________________________________

Pause and Reflect

Think about the last time you or a member of your family had an eye examination. What parts of the exam do you remember? What procedures were used? What pieces of equipment do you recall? Circle anything in the text you remember from your examination. Write down any questions you might have for your ophthalmologist or optometrist at your next exam.

_________________________________________________________________________________________
_________________________________________________________________________________________
_________________________________________________________________________________________
_________________________________________________________________________________________
_________________________________________________________________________________________
**Relate and Remember**

Using this diagram of the eye, list 3 to 5 terms for each area that the physician might use to describe the findings in that area.

![Eye Diagram]

**Collaborate and Share**

As a group, draw a mind map for the eye exam, listing the tests and diagnostic maneuvers used to examine the eyes in the secondary circles. Before beginning the next layer of circles, trade maps with another group. Then, for the map you now have, fill in the next layer of circles with possible results from these tests and maneuvers. Now trade maps with another group and begin another layer of circles showing one or more diagnoses for each of the positive findings in the third layer.

**Explain and Learn**

Turn to the person next to you (or behind or in front of you), and share with each other one important piece of information you got from this chapter. Also share how you might use this information in your life or in your work. If you have a question that wasn’t answered in the chapter, share that as well. If your partner doesn’t have the answer, ask your instructor.
Relax and Play

1. Using the words from the terms list in the chapter, write a poem or song that incorporates the terms in such a way as to reveal their meaning or use. If writing a song, you can use a familiar tune or rap style.

2. With all members of the class standing, choose a term pertaining to the eyes that begins with the letter A and make a statement beginning with this term, such as “Astigmatism is warping of the cornea.” The next student makes a statement beginning with the letter B, such as “Blue sclerae can be a symptom of connective tissue disease.” Continue through the alphabet, with each student taking the next letter. Anyone who cannot come up with a statement sits down. The winner is the last person standing.

Generalize and Apply

The effects of systemic conditions such as diabetes, arteriosclerosis, and hypertension are readily observed on funduscopic examination. Based on your knowledge of these conditions, speculate on what these findings might include. Compare your assessment with those of your classmates.

_________________________________________________________________________________________

_________________________________________________________________________________________

_________________________________________________________________________________________

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Compare and Contrast

The eye is often compared to a camera. What are the similarities? How are they different? What other comparisons might you make?

_________________________________________________________________________________________

_________________________________________________________________________________________

_________________________________________________________________________________________

_________________________________________________________________________________________

_________________________________________________________________________________________

_________________________________________________________________________________________
Extrapolate and Project

Vision correction is now possible through a variety of surgical procedures. Investigate the types of procedures available and determine which vision deficits can be corrected surgically and which are not amenable to such a procedure. Interview someone who has undergone surgical vision correction. Summarize your findings below.