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Lesson 2: Navigating Eyecare, Medical Eye Treatment, and Rehabilitation Training

Introduction

Routine eye examinations are an essential part of maintaining eye health. Therefore, it is important to know as much as you can about the types of appointments and which services can be provided. This information can reduce confusion and allow people to maximize their health care.

Any kind of doctor's appointment can be stressful; however, stress can be unusually high if there is uncertainty regarding the exam results or what will transpire during the appointment. The goal of this lesson is to better prepare and empower people for visits to the eye doctor. This lesson will also provide information on some treatments, and when vision cannot be corrected, what additional services can be sought to learn to cope with and live with vision impairment.

It is important to note that the frequency and types of appointments with an eye doctor will depend on age, general health, and whether or not any ongoing eye disorders are present. An annual eye examination is recommended for individuals aged 60 or older because cataracts and other age-related eye problems are more likely to develop. Other health problems, such as diabetes, make regular eye examinations crucial for maintaining good eye health. Individuals diagnosed with an eye disease such as glaucoma, diabetic retinopathy, or macular degeneration need to see an ophthalmologist regularly. This frequency should be determined by the eye doctor and may be more frequent than once a year.

If an individual develops an eye condition with no current treatment, the doctor may say something like, "there's nothing I can do." Note that these statements refer to the specific date and time that this message is delivered and that the statement refers only to medical interventions. Research is continually being conducted to learn more about eye conditions and find new treatments. Just because a doctor indicates that nothing can presently be done does not mean that there will be no future treatment options. Additionally, scheduling regular eye exams may uncover a different condition that has a treatment. Some eye conditions are not noticeable until

they have already taken the majority of an individual's vision. For this reason, visiting the eye doctor regularly is very important.

Lesson Goals

- To clarify the differences between normal vision, visual impairment, total blindness, legal blindness, and low vision.
- To describe the similarities and differences among eye doctors, ophthalmologists, optometrists, and low vision specialists and the services each provides.
- To prepare for a comprehensive dilated eye examination.
- To prepare for a low vision examination.
- To identify frequently used abbreviations that commonly appear on eye doctor reports.

Visual Impairment Terminology

Vision Standards

Before discussing the definitions of terms that describe vision loss, defining the standards for vision is necessary. Visual acuity is tested based on how accurately an individual can read lines of letters displayed on a chart 20 feet away. Each line of letters gets increasingly smaller. The standard chart used for this test is called the Snellen acuity eye chart. The Snellen Eye Chart tests distance acuity vision or how sharp your vision is when viewing something at a distance. A person whose central vision is clear and sharp enough to read the chart's eighth line from 20 feet accurately is considered to have normal vision. The standard for normal vision is expressed with the measurement of 20/20. As acuity decreases, the bottom is larger, such as 20/70, 20/200.

Visual Impairment

The term visual impairment describes the vision loss of someone who may not see well even with glasses or contact lenses and someone who is blind or unable to see at all. The term does not describe what a person can and cannot see but is part of a classification system. Below are some classifications of the term *visual impairment* from the World Health Organization (1992), based on the numbers used on the Snellen acuity eye

chart:

- Moderate visual impairment: 20/70 to 20/160.
- Severe visual impairment: 20/200 to 20/400 or a visual field of 20 degrees or less.
- Profound visual impairment: 20/500 to 20/1000 or a visual field of 10 degrees or less.
- Light perception: the ability to know when a light is on or off in a room.
- Total blindness: the complete absence of light and form perception.

Legal Blindness

The term legal blindness was defined by the American Medical Association (AMA) in 1934 to determine an individual's eligibility for government benefits. As such, it doesn't tell much about what a person can or cannot see. The definition has two parts. Part 1 is based on an individual's visual acuity. The clinical diagnosis refers to a central visual acuity of 20/200 or less in the better-seeing eye with the best possible correction. In other words, if you can read only the large letter E on the first line of the Snellen eye chart at 20 feet while wearing your glasses or contact lenses, the eye doctor will record your acuity as 20/200 with the best correction. Practically speaking, this means that the detail you can see at 20 feet is the same that someone with normal vision can see at 200 feet.

Part 2 of the AMA definition of legal blindness is based on the peripheral vision an individual has. The clinical diagnosis refers to a visual field of 20 degrees or less without moving the eyes or head from side to side. This is frequently called tunnel vision. This peripheral vision level represents what someone with normal vision would see when looking through a drinking straw. Only one of these diagnoses is needed to meet the legal blindness criteria.

In 2007, the Social Security Administration updated the criteria for measuring legal blindness using newer low vision test charts with lines measuring visual acuity between 20/100 and 20/200. Under the new standards, if a person's visual acuity is measured with one of the newer charts, and they cannot read any of the letters on the 20/100 line, they will

qualify as legally blind, based on visual acuity of 20/200 or less.

Low Vision

Low vision refers to any visual limitation that is not correctable by eyeglasses or medical or surgical treatment. That interferes with a person's daily activities, such as reading, cooking, housekeeping tasks, and walking outside safely without a mobility tool.

Functional Vision

How well a person processes the visual information to go about daily tasks is called functional vision. Two people can have the same clinical diagnosis, such as glaucoma with 20 degrees of visual field acuity of 20/100, but function very differently, especially if one has been trained to safely, efficiently, and effectively use his vision.

Eye Doctors and Services

There are three primary types of eye care services, including ophthalmology, optometry, and low vision. The eye doctors who work in these are known as ophthalmologists, optometrists, and doctors who specialize in low vision. Although there are many similarities in the services provided by these doctors, there are differences to note based on current and future needs.

Ophthalmology and Ophthalmologists

Ophthalmology is a branch of medicine specializing in the anatomy, function, diseases, and disorders of, and injuries to, the human eye. A practitioner in this field is called an ophthalmologist.

Ophthalmologists specialize in the medical and surgical treatment of the eyes and prevention of eye disease. They are trained to provide the full spectrum of eye care, from prescribing glasses and contact lenses to performing complex, delicate surgery. Ophthalmologists treat and prescribe medication to improve or prevent further complications from vision-related conditions. Many ophthalmologists are dedicated to scientific research into the causes, treatments, and cures for eye diseases and other health issues that affect vision. He or she must have completed four years of medical school, a one-year internship, and three years of residency training in

ophthalmology. Ophthalmologists are licensed by state regulatory boards and will have the abbreviation M.D. (doctor of medicine) or D.O. (doctor of osteopathy) after their names. Ophthalmologists are required to fulfill continuing education requirements to stay current regarding the latest standards of practice.

Optometry and Optometrists

Optometry is concerned with the health and function of the eye and related structures. The specialist in this area of eye care is called an optometrist.

Optometrists conduct eye examinations, prescribe corrective contact lenses and glasses, and diagnose eye diseases and disorders. Many states have passed legislation that permits optometrists to perform procedures such as laser treatments, administer local anesthesia and injections for macular degeneration, and prescribe a wider range of medications than other states.

The optometrist must have a bachelor's degree before completing four years of optometric studies in optometry school. Optometrists often do further training in a specialization. The abbreviation O.D. (doctor of optometry) appears after their names. Their state's regulatory board licenses optometrists; each state determines the scope of optometric practice. Like ophthalmologists, optometrists must fulfill continuing education requirements to stay current regarding the latest standards of practice.

Low Vision Eye Doctor

Some optometrists and ophthalmologists have an additional specialization in conducting low vision examinations. The specialization covers low vision testing, diagnosis, and treatment with optical and non-optical devices. If an individual has some usable vision, a low vision examination can determine whether optical and non-optical devices and functional low vision training can help improve the efficient use of functional vision.

Optician

An optician is an eye care professional trained to prepare and dispense optical devices, such as lenses and frames for eyeglasses, contact lenses,

and artificial eyes (prosthetics). Some opticians also supply low vision optical devices. Opticians typically learn on the job under the training and supervision of an experienced optician. Their training is similar to an apprenticeship or internship. They learn how to interpret written prescriptions and technical instruction to measure eyes and adjust eyeglass frames under the experienced optician's education.

Many community colleges and technical schools offer an associate's degree in opticianry. Other colleges offer a one-year certificate. As of December 2016, 23 states require licensure for opticians.

Comprehensive Dilated Eye Examination

An ophthalmologist or optometrist performs comprehensive dilated eye examinations, although a vision technician may handle some non-medical parts. This exam takes an hour or more to complete.

In preparation for the appointment, it may be helpful to know the types of questions doctors commonly ask during comprehensive dilated eye exams. You may also want to have a list of questions ready to ask about the symptoms, prognosis, and exam results.

Components of the Comprehensive Dilated Eye Exam

This examination should always include the following elements:

Health and Medication History

- Overall health and that of the immediate family
- List of all prescriptions and over-the-counter medications and vitamin supplements
- Questions about high blood pressure, diabetes, and other risk factors

Vision History

- How well you can see at present, including any recent changes in your vision
- Eye diseases you or family members have had
- Previous eye treatments, surgeries, or injuries
- Date of your last eye examination

Current Vision Problems

- How long you've been having any current vision problems
- When the problems occur, such as at night, on very sunny days, etc

Tests

The comprehensive dilated eye exam assesses all parts of your eyes and their current health and function.

- External eye examination: the doctor will examine your sclera, conjunctiva, eyelids, eyelashes, and tear ducts to make sure they are healthy.
- Internal eye examination: your doctor will use a machine with special lenses and use drops to enlarge (dilate) your pupil, making it easier to see your retina and optic nerve. Expect the drops to cause excessive tears, blurred vision, and sensitivity to light, especially sunlight. Be sure to bring dark sunglasses to wear after the appointment.
- Tonometry test: this test measures the pressure in your eyes to see if you are susceptible to glaucoma.
- Acuity test (refraction): refraction helps the doctor determine the sharpness and clarity of both your near reading and distance vision. It helps determine if your vision can be improved or corrected with glasses or contact lenses.
- Visual field test: this examination helps determine how much peripheral or side vision you have and how much surrounding area you can see.

Examination Results

Based on the tests, the doctor can tell if the visual problems you are experiencing are normal age-related changes or symptoms of a disease. If further testing, a referral to another specialist, or treatments are needed.

It is also essential to discuss the frequency of follow-up examinations. Depending on the health of the eyes and vision conditions, there may or may not be treatments. Regardless of whether a vision condition can be treated, it is important to continue getting check-ups to monitor and prevent

additional problems. Individuals should always ask for possible next steps. Suppose there is nothing that can be done by the ophthalmologist. In that case, referrals should be made to low vision specialists, doctors specializing in the condition, rehabilitation training, and other services for people with vision loss.

Questions to Ask the Eye Doctor

Here are some suggestions for what you may want to ask your doctor once he or she has performed the exam:

- What is the name of my eye disease or disorder?
- What is the cause of my vision loss?
- Is my condition stable, or can I lose more sight?
- Is there any treatment for my eye condition?
- What is my visual acuity?
- Do I have a loss of peripheral vision?
- Will glasses or contacts help me?
- How can I protect my remaining vision?
- Do I need any particular medications?
- Do I qualify as legally blind?
- Am I entitled to any special services or benefits?
- What resources and rehabilitation services are available to me?

The Low Vision Examination

Few people with vision loss are totally blind. Eighty-five percent of all people with visual impairments have some usable vision. People with remaining vision often benefit from a comprehensive functional low vision examination performed by a doctor with a low vision specialization.

The low vision examination likely will take longer than the comprehensive dilated eye examination you usually have with your regular ophthalmologist or optometrist. Although it may include a few of the same tests, the low vision examination will focus on tests to determine the following:

- Amount and type of remaining vision
- How effectively remaining vision is utilized
- Which practical, everyday skills and non-optical and optical devices

would be helpful to use vision more effectively

Components of the Comprehensive Low Vision Examination

Low Vision History

- When vision problems began
- Activities that are becoming difficult
- The vision rehabilitation services being utilized

Acuity Test (Low Vision Refraction)

- The low vision doctor may use the Snellen chart and use special eye charts that present different-sized letters and numbers to help determine near and distance vision more accurately. These tests may be conducted at closer distances than the Snellen chart.
- The Amsler grid test uses a chart with dark horizontal and vertical lines that form a grid. If a person sees wavy, distorted, missing, or broken lines, they may be experiencing eye problems that need monitoring. A copy of the Amsler grid can be requested from the doctor so an individual can self-monitor vision at home.

Specialized Tests

The doctor will usually test acuity, the field of view/presence of blind spots, color vision, contrast sensitivity, and ask questions about light sensitivity.

Doctors and technicians will ask a wide range of questions. Some of these questions will be about habits or activities in reading and near vision activities, such as the following:

- What size print can you read?
- How long can you read before your eyes tire?
- Is reading so tedious you have difficulty remembering what you've read?
- Can you travel independently without getting disoriented?
- Does sunlight bother you? If so, in what way?
- Individuals should be prepared to describe their experiences and difficulties in as much detail as possible. It is also helpful to bring examples of items you wish to read and the currently used devices.



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This information can help guide discussions with the low vision doctor and the doctor's professional staff.

After the exam, the low vision doctor may provide referrals to one or more specialists, including a low vision therapist, occupational therapist certified in low vision, a vision rehabilitation therapist or teacher, and an orientation and mobility specialist in providing the practical training. The low vision therapist is not a low vision eye doctor, but someone with training to help you learn to better use your vision. The low vision therapist often works for an ophthalmologist, optometrist, or doctor specializing in low vision. Many low-vision therapists can be reimbursed by Medicare for certain training hours as authorized by a doctor.

The vision rehabilitation therapist or teacher teaches individuals who are blind or who have low vision the visual and non-visual skills to compensate for vision loss in everyday life. These skills may include home and personal management in medication management, meal preparation, adaptive or assistive equipment, and other daily living activities.

The orientation and mobility specialist works with individuals with low vision and who are blind to teach them to travel safely, including the long white cane. The vision rehabilitation therapist and the orientation and mobility specialist conduct a functional assessment to determine the individual's specific needs and goals, create a plan, and then provide the instruction. These professionals may work for a state agency that provides vocational rehabilitation training, a private community rehabilitation provider, or be independent contractors.

If your eye care provider does not refer you to one of these organizations, contact your local or state vocational rehabilitation agency to locate services in your community. The vision rehabilitation and orientation and mobility training are usually provided at no cost.

Preparing for the Low Vision Examination

Each person with low vision has unique needs and priorities. Factors such as functional vision, interests, aptitudes, and experiences will help identify each person's best solutions and equipment. Being clear about what you want and what is most important will enable a successful plan to be formed.

Some helpful tips to help with preparation include:

- Bring examples and a list of items that are difficult to see/read. Some examples of items to bring include bills, bank statements, official papers, cards, handwritten letters, books, magazines, cookbooks, and other printed items.
- Make a list of specific activities that are difficult to do due to vision loss. Examples may include: reading labels on medications, canned goods, cleaning products, using a computer, watching T.V., playing cards or games, sewing, crafts, shopping, and attending the theater or sports events. Be prepared to talk about goals and expectations for each topic.
- Bring any glasses, adaptive aids, and magnifiers that were previously helpful or are currently being used. Describe what works and does not work with each item.
- Bring all forms of insurance to the appointment. Keep in mind, many devices or aids will not be covered by insurance. Ask the low vision clinic before the appointment, whether the exam cost will be covered.

Understanding an Eye Report

Abbreviations Used on Eye Reports

Every profession has its list of related abbreviations. Eye doctors have more than a hundred they use when taking notes and writing their reports. Below is a list of 25 abbreviations that may help you understand what the doctor is talking about in the examination report.

Types of Testing

- A.C.: accommodation (changes in the ocular lens from distant to near vision)
- PERRLA: pupils equal round reactive to light and accommodation (do pupils react normally?)
- IOP: intraocular pressure (tonometry test for glaucoma)
- LVA: low vision aid (variety of magnifiers)

Terminology Associated with Acuity Testing

- B.V.: binocular vision (seeing with both eyes together)

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- NV: near vision (reading test)
 - DV: distance vision (seeing across the office or further)
 - O.D.: right eye
 - O.S.: left eye
 - O.U.: both eyes
 - VA: visual acuity
 - V.F.: visual field (peripheral vision)
 - C.F.: count fingers (one test when acuity can't be measured)
 - H.M.: hand motion (patient can see the movement of hands but cannot count fingers)
 - L.P.: light perception (able to see lights but no objects)
 - NLP: no light perception

Terminology Related to Diseases and Age-Related Disorders of the Eyes

- D.R.: diabetic retinopathy
- V.H.: vitriol hemorrhage
- RD: retinal detachment
- PVD: posterior vitreous detachment
- DES: dry eye syndrome
- MH: macular hole
- POG: primary open-angle glaucoma
- AMD: age-related macular degeneration
- CAT: cataract

Recommendations for Appointments

- It may be helpful to take another person with you to doctor's appointments to listen and take notes.
- Advise anyone attending appointments to refer all questions and comments from doctors and other staff directly to you.
- It may help make an audio recording of your conversation with the doctor to help retain all of the information provided.
- Be assertive. After the appointment, ask when you will be contacted

with the test results. Call the doctor's office if you do not hear by the expected date.

- Contact the office the day before an appointment to ensure any lab tests or information from other doctors have been sent.
- Educate yourself about your eye condition. Build your knowledge base so you can ask your doctors good questions. Ask the doctor to explain the test results to you in terms you can understand to discuss your eye condition's implications.
- Ask for assistance in getting around the doctor's office or locating the restroom. The staff may not realize you do not see well enough to move through the clinic's halls independently and safely.
- Practice proper human guide techniques. To be safe, ask to hold onto the elbow of anyone guiding you. Don't allow anyone to pull or push you. (See Lesson 6 for more information on the human guide technique.)
- Ask the doctor to refer you for vision rehabilitation training, either with an occupational therapist if you have vision that can be maximized with low vision devices or through eccentric viewing, or to a state or private agency that provides rehabilitation training teaching adaptive skills for living with visual impairment.

Summary

Attending a low vision evaluation or examination with an eye doctor can be overwhelming and cause stress. Some steps can be taken to mitigate some of that stress and make it a more positive experience. When living with a visual impairment, an eye doctor's appointment can cause extreme sadness or other strong emotions. It's important to remember that medical appointments are just the first step in this process. No matter what the diagnosis or prognosis, some resources can help. With training, tools, and support from an orientation and mobility specialist, vision rehabilitation therapist, and low vision therapist, people can continue to live a productive, fulfilling, independent life!



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Suggested Activities

Make a list of the following to take with you to your next doctor's appointment:

- Questions you have about your vision condition and treatments.
- Activities and tasks you are currently having difficulty doing independently.
- Goals that you would like to achieve and the activities you would like to resume.