

Lessons for Living with Vision Loss





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Linda Jones, CVRT
Kendra Farrow, CVRT
Sylvia Perez, CVRT
John McMahon, Ph.D., CVRT
Sarah Clark, LMFT, LMHC, CVRT
David DeNotaris, CPM

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Introduction to Lessons for Living with Vision Loss

Welcome to Lessons for Living with Vision Loss brought to you by the National Research and Training Center on Blindness and Low Vision, home of Independent Living for Older Individuals who are Blind Technical Assistance Center (IL OIB-TAC).

Through this series of lessons, you will learn about your eye condition and ways to get around safely in your home, and you'll develop basic techniques to perform your daily tasks. You already use many of these techniques every day without vision but probably don't realize it. For example, everyone has reached into a pocket and pulled out house keys, a quarter, or something else typically carried in a pocket, using only the sense of touch. The taste or smell of a glass of milk lets you determine if it's fresh or sour. In truth, not one task is done using only vision. Learning to gather information from all of your senses and develop the techniques presented in this course can help you become confident in your ability to live more independently with vision loss.

Adaptive strategies and techniques to accomplish everyday tasks with low vision and blindness are covered in this course. For example, Lesson 1 will give you a brief overview of the eye's anatomy and discuss several age-related eye conditions that cause vision loss and how those conditions affect daily activities. Lesson 2 describes various eye care providers. Some questions you might consider asking to gain a greater understanding of your eye condition, what you should expect, possible treatments, and so on. Many lessons introduce helpful techniques you can use to perform tasks with little or no vision, including how to use your senses more efficiently and ways to use your remaining vision more effectively. Lessons address topics such as low vision aids, reading, and writing, moving around safely, organization and labeling, cooking, handling money, using computers and smartphones, and engaging in leisure and recreation activities. There is also a lesson devoted to helping you adjust to vision loss emotionally and socially.

As you read the information in these lessons, keep in mind that the information is in no way comprehensive. If you come across a topic or situation in your life, which is not addressed, go online to search for strategies or adaptive devices. Check out the list of resources to find examples of companies and services. Although some specific products are

mentioned by name, many similar products are available. At the end of each lesson are several suggested activities to help you apply the information. In lessons where specific products or services are discussed, you will find the website and or phone number listed at the end of that lesson. Additionally, we have compiled the complete list of services and companies mentioned throughout the lessons in a separate resource section.

Those listening to this on their talking book player, note that this introduction, table of contents, each lesson, and list of resources can be navigated to by navigating at the chapter level. Additionally, each lesson's headings or subsections can be reached on the next level of navigation. You can move both forward and backward throughout this recording by pressing the fast forward and rewind buttons. You will hear an audible tone as you pass the heading and chapter markers.

Helpful Suggestions

- You do not have to read the lessons in order. However, we do suggest that you take Lessons 1, 3, and 4 first. These lessons are used as building blocks for the techniques and information presented in the other lessons.
- You may revisit a lesson as many times as you want. We suggest that you take your time as you read through each lesson. Don't hesitate to read through a section several times and take notes if you wish, especially about techniques you want to try later. Stop and try the techniques when you encounter them in the lessons. If you want to work on a part of a lesson one day and finish it the next, pause the recording and restart it again when you are ready to continue. If it would be easier to have a print copy of a lesson, feel free to visit IL OIB-TAC, where you can find a downloadable version of these Lessons for Living.
- You can use the following links to locate rehabilitation agencies and professionals by visiting American Foundation for the Blind (AFB) VisionAware the OIB-TAC
- or if you are a veteran please contact your local_US Department of Veterans Affairs_for help with your vision loss.

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Lesson 1: Anatomy and Diseases of the Eye

Introduction

The first lesson introduces you to the parts of the eye, their functions, and the impacts disease and aging have on the eyes and vision. Described are several eye conditions, including glaucoma, cataracts, age-related macular degeneration, diabetic retinopathy, presbyopia, dry eye syndrome, and stroke-related hemianopsia. These conditions are common to individuals over age 60 and the effects they have on daily activities. Many people with visual impairments are not provided adequate information about their condition to understand the cause, impact on vision, and prognosis. This leads to numerous questions and a feeling of uncertainty. The goal of this lesson is to answer those questions in plain language. Having this information helps people better understand why they see what they see and effectively utilize the suggestions and adaptive techniques in the remaining lessons of this course.

Lesson Goals

- Identify the parts of the human eye that can be affected by the disease.
- Explain age-related eye conditions, including the part of the eye affected by each condition, the effects of each condition on vision, and the treatments for each condition.
- Describe ways each condition impacts daily activities.

Parts of the Eye

Sclera

The outer, white part of the eye that can be seen is called the sclera. It covers the entire eyeball except for the cornea, which will be described next. The two purposes of the sclera are to give shape and to protect the rest of the eye.

Cornea

The clear, dome-shaped front of the eye is called the cornea. It's often called the window of the eye, allowing light to pass into the eye then through the pupil to the back of the eye. The cornea is a type of lens that produces 80 percent of the eye's focusing power. It makes it possible for people with normal vision to read and see images.

Because the cornea is clear, it does not have blood vessels to nourish it or

protect it from the disease. These essential functions are carried out by a thin membrane called the conjunctiva, along with tears on the outside of the eye and a fluid called the aqueous humor on the inside.

Iris and Pupil

The first thing most people with sight notice about someone's eyes is the color of the iris. The iris regulates the amount of light that enters the eye through the hole in the iris' center, called the pupil. Muscles in the iris open the pupil more to allow light when in a dark environment such as a movie theatre or close the pupil in bright light such as a sunny day at the beach. Thus, the pupil is a hole that lets light into the back of the eye where light is converted into electrical impulses. These impulses are carried to the brain, where they are changed into the visual images seen by people with normal vision.

Aqueous Humor

Between the cornea and the iris is a space filled with aqueous humor, a clear, watery fluid that helps bring nutrients to the eye tissue, especially the cornea. The fluid is produced by the ciliary body, located just behind the iris, and flows from there to the front of the eye. Along with nourishing the eye's tissue, the aqueous humor regulates the pressure within the eye. When the aqueous fluid flow is obstructed, the pressure inside the eye can increase and cause glaucoma.

Ocular Lens

The ocular lens lies directly behind the pupil. Like the cornea, the lens is composed of crystal-clear tissue. Together, the cornea and ocular lens focus light and images on the retina. This flexible lens's primary function is to change its shape so the eyes can focus on objects and people nearby or at a distance. The lens becomes more rounded to focus on near objects, and it flattens to focus on objects far away.

Over time, the lens begins to lose some of its elasticity and, therefore, loses some of its ability to focus on nearby objects. This condition, known as presbyopia, starts to develop around age 40 and is the reason people need reading glasses as they age.

Vitreous Humor

Between the ocular lens and the back of the eye or the retina is a transparent jelly-like substance called the vitreous humor. The vitreous is tightly attached to the retina when we are born, but over time, it begins to

separate from the retina and becomes liquefied. Parts of the vitreous can develop a "stringy" consistency and look like something floating around in your eyes. These are known as "floaters" and can be caused by several other conditions, such as hemorrhages in the retina from diabetic retinopathy and a detaching retina.

Retina

The retina lines the inside, back of the eye. The light-sensitive cells in the retina convert incoming light into electrical impulses that make it possible for the brain to produce visual images. The retina is made of two types of cells: cones and rods. Most of the cones appear in the macula, a small area of the retina responsible for central vision and where the sharpest vision occurs, making it possible to read and see colors. These cells function best under good lighting. The rods form the majority of the periphery of the retina, along with a few cones. Rods are not color sensitive and do not have the focusing power of the cone-rich macula. These cells function well at night or in places with low lighting, such as movie theaters.

Several diseases are associated with the retina, including macular degeneration, diabetic retinopathy, and retinitis pigmentosa, but only one disease is specifically associated with aging, age-related macular degeneration (AMD).

Optic Nerve

Attached to the retina at the back of the eye is the optic nerve. It consists of more than one million nerve fibers attached to the retina and links the eye directly to the brain's vision centers. The brain takes the optic nerve's information and converts it to the visual images that the eyes see. In the optic nerve center, where it connects with the eye, is the optic disc. The optic disc creates a blind spot because it contains no rods or cones needed for the brain to create visual images.

Exterior Parts of the Visual System

On the outside of the eye are five essential components of the visual system: the bony orbit, the extraocular muscles, the conjunctiva, the tear film, and the eyelids.

Bony Orbit and Extraocular Muscles

The bony orbit is the bone structure, composed of numerous small bones surrounding and contains the eyeball. The bony orbit protects the eye and provides connections for the six extraocular muscles that move each eye.

These muscles attach to six different places on the eyeball and insert into six locations on the bony orbit.

Conjunctiva

Covering the sclera's outside surface and lining the eyelids' inner surface is a thin, somewhat transparent membrane called the conjunctiva. It provides nutrients and infection-fighting substances to the external surface of the eye. It also helps prevent friction from eye movements and blinking.

Eyelids and Tears

The eyelids help protect the front of the eye from injury and excessive exposure to light. They also help spread the tear film over the surface of the eyes. The tear film has multiple purposes. It keeps the eyes moist, supplies nutrients to the cornea, and is essential for maintaining the cornea's transparency and health. Tears also fight infection, flush away bacteria, protect the cornea from drying out, and eliminate dust, allergens, and other airborne irritants. A condition called dry eye syndrome can occur due to the quality and quantity of tears.

Eye Conditions

Dry Eye Syndrome

Healthy tear film consists of three essential components that come from three separate areas of the eyelids:

- The innermost layer is the mucin layer. This layer consists of thick, slippery mucus material. It acts as a protective lubricant and provides a smooth surface for even tear film distribution over the eye's surface.
- The middle layer is the aqueous layer. This layer consists of water, proteins, oxygen, and salts (the reason for the salty taste of tears). It provides nutrients to the surface of the eye, removes waste products, and prevents infection.
- The outermost layer is the lipid layer. This layer consists of oils that coat the aqueous layer, acts as a sealant to stop the tears from evaporating, and prevents the tears from flowing over the lower eyelid.

If any one of these components is missing, the quality and function of the tears are affected.

As people age and produce fewer and poorer-quality tears, such as those with an improper balance of water, oil, and mucus, the incidence of dry eye increases. Dry eye can cause irritation, itchiness, a gritty sensation, a

feeling that something is in the eye, sensitivity to light, and blurry vision. Some medications and medical conditions reduce the eye's ability to produce all three components of high-quality tears, leading to a dry eye. Eye diseases, eye surgeries, contact lenses, and eye drops containing preservatives can affect the tears' quality or damage nerves that sense and respond to dryness.

The cornea's dryness can stimulate a reflex tear production, though these reflex tears are of poor quality and do not relieve dry eye. Keep in mind the importance of high-quality tears for the health of the eye, especially the cornea. Severe damage can occur to the cornea if dry eye is left untreated. Certain types of artificial tears are helpful. Discuss with your doctor which artificial tears you should use.

Presbyopia

Presbyopia is a common type of vision disorder that occurs with aging. It is a normal part of aging and affects virtually everyone, usually becoming noticeable after age 40.

Presbyopia results in the inability to focus up close. Presbyopia is a problem that is associated with refraction in the eye. The eye cannot focus light directly on the retina due to the hardening of the natural lens. Aging also affects muscle fibers around the lens, making it harder for the eye to focus on up-close objects. The ineffective lens causes light to focus behind the retina, creating poor vision for objects that are up close.

People with presbyopia typically hold reading materials at arm's length to bring the words into focus. They may experience headaches or eyestrain while reading, viewing a computer screen, or doing close work. Presbyopia can be corrected with reading glasses, bifocals or variable focus lenses, or contact lenses. Using bright, direct light when reading is also helpful.

Cataracts

In their 60s, many people began developing another age-related problem with the ocular lens known as cataracts. In fact, according to the National Eye Institute, 50 percent of all people in the US will develop cataracts or will have cataract surgery before age 80.

Simply put, a cataract is a progressive cloudiness, hardening, and yellowing of the normally clear, transparent ocular lens. Over time, vision acquires a brownish tint, and everything becomes blurry or appears as if seen through a dirty windshield. The overall blurred vision created by cataracts causes people, objects, and colors to look hazy or washed out.

For example, navy blue, brown, black, and purple are challenging to differentiate. For some people, the inability to see details can make it difficult to watch television, read a book, see the clock, identify the food on a plate, enjoy hobbies, and walk safely indoors or outside. Increased sensitivity to glare can have a disabling effect on driving at night or in bright sunlight.

Some cataracts progress more slowly than others. If a cataract is allowed to develop for an extended period, it may cause inflammation or increase the intraocular pressure.

Currently, surgery is the only treatment for cataracts. Removal of cataracts is usually successful, with 98 percent of patients having improved vision if no other eye condition is present. It is important to note that the presence of some eye conditions, such as glaucoma, diabetic retinopathy, and Macular Degeneration, may result in complications due to surgery on the compromised eye. These should be discussed with your doctor. It is up to the patient to decide about having cataract surgery once all the risks and possible complications have been discussed.

Glaucoma

Although there are several types of glaucoma, the most common type is called open-angle glaucoma. The point at which the iris and cornea intersect creates an angle where the aqueous fluid flows out of the eye and into the bloodstream. If the angle restricts the flow of the aqueous, the pressure will build within the eye. The results of increased pressure are a loss of peripheral (or side) vision initially. Glaucoma can and should be treated to reduce the risk of vision loss, as glaucoma can result in total blindness.

The normal pressure within the eyes ranges from 10 to 21 mm. Most people with glaucoma have an IOP (intraocular pressure) measurement greater than 21 mm Hg. A tonometer is a machine that measures eye pressure. A tonometer lightly presses on the cornea and measures the amount of pressure it takes to flatten the cornea. As the eyes' pressure increases, the potential for damage to the retina and optic nerve increases. If your eye doctor suspects that you may have glaucoma, you will need to undergo additional testing to help your doctor make a more definitive glaucoma diagnosis. Left untreated, high eye pressure can cause permanent vision loss, so it is essential to schedule comprehensive eye exams to follow the condition regularly. The use of eye drops is the primary treatment, but doctors will treat it with a laser to increase the flow of

aqueous and release pressure in some cases.

Early symptoms or warning signs are rare at the onset of glaucoma. Anyone who does not have regular dilated eye exams may be legally blind before noticing any signs of the disease. Glaucoma symptoms can include a visual field similar to looking through a drinking straw or a narrow tunnel, poor night vision, and frequent episodes of tripping or bumping into things due to peripheral vision loss.

Someone with glaucoma should continually look around, scanning the environment to compensate for peripheral vision loss. It is easy to overlook things on a counter, in an oven, in a drawer, etc. Also, if peripheral field loss impacts a person's ability to move around safely, they may benefit from orientation and mobility training and the use of a white cane. Unless much of the central vision is left intact, reading from line to line can be difficult. The eyes may also take longer to adapt when going from bright to dark lighting conditions, such as going into a movie theater on a sunny day.

Age-Related Macular Degeneration

Age-related macular degeneration (AMD) is the leading cause of vision loss in people age 60 and older in the US. AMD is a gradual, progressive, painless deterioration of the macula, the small area in the retina center responsible for focusing on fine details. Someone with AMD may find it difficult to read a book or public restroom sign. Because the disease usually does not affect peripheral vision, they have no difficulty walking around, especially in familiar areas. However, the individual should still consider using a white cane to enhance safety. For example, if a traveler has some sight but doesn't always trust his or her vision, a white cane can help by detecting obstacles or elevation changes, leading to fall prevention.

There are two types of AMD, wet and dry. Most cases start as the dry type, but 10 to 20 percent develop into the wet type. AMD always occurs in both eyes but does not necessarily progress at the same pace in both. For this reason, it's possible to have wet AMD in one eye and dry in the other.

Approximately 80 to 90 percent of individuals who experience AMD are diagnosed with the dry type. Dry AMD occurs when small white or yellow deposits called drusen form on the retina beneath the macula, causing the macula to deteriorate and thin over time. Dry AMD seems to progress more slowly than the wet type of AMD, but unlike the wet type, there is no approved treatment or cure at this time. Nutrition, weight control, and nutritional supplements may all delay or reduce dry macular degeneration severity.

The signs of dry AMD include blurry distance and near vision, a need for increased lighting for near-vision tasks, difficulty going from bright light to low light, such as when entering a dimly lit room from outdoors, trouble recognizing faces, and a reduction in the vividness of colors. The dry condition usually affects both eyes, but some might experience symptoms in only one eye. People with dry AMD often have delayed awareness of vision symptoms in their non-dominant eye.

Although the wet type of AMD affects less than 20 percent of cases, it accounts for 90 percent of all severe vision loss cases from the disease. In wet AMD, abnormal blood vessels develop under the retina and begin growing toward the macula. These blood vessels may leak fluid or blood, blurring or distorting the central vision. Vision loss from wet AMD can occur faster and may be more noticeable than the dry type. The longer the abnormal blood vessels leak or grow, the higher the risk of losing a more detailed vision. In some cases, the dry type of macular degeneration turns to wet over time.

An early symptom of wet AMD is visual distortion. Typically, straight lines, such as the lines on a piece of graph paper or the lines between tiles in a bathroom, appear wavy or crooked. The central vision will have gray or blank spots. The sizes of objects may appear different when viewed with each eye. Individuals with dry macular degeneration are encouraged to use an Amsler grid (a simple graph with lines) to help spot these changes early so that they can obtain treatment before damage occurs. If you have been diagnosed with age-related macular degeneration, ask your eye care professional for an Amsler Grid you can use at home.

Injections directly into the eye are the standard treatment for wet AMD. The treatment targets a specific chemical in the body that causes the abnormal blood vessels to grow under the retina. The injected medication reduces the blood vessels' growth, slows the leakage, and helps slow vision loss. This treatment has delayed the progression of wet AMD for many people.

AMD affects all tasks that require the ability to focus on fine details, such as reading, writing, threading a needle or fishing line, hammering a nail, watching television, and playing cards. It is possible to learn new ways of doing all of these tasks.

Diabetic Retinopathy

Diabetic retinopathy, another disease that affects the retina, is the leading cause of new cases of adult-onset blindness in the US, especially among African Americans, Latinos, and Native Americans. Diabetic retinopathy

occurs when the walls of tiny blood vessels in the retina are weakened by prolonged exposure to high levels of blood sugar. This damage can cause blind spots, blurry vision, and vision loss. With diabetic retinopathy, vision can fluctuate from day to day or even from morning to evening.

In a healthy eye, small blood vessels nourish tissue and nerve cells in the retina. In the early stages of diabetic retinopathy, some blood vessels bulge and leak fluid into the retina, causing blurred vision. As the disease progresses, the retina's blood vessels become blocked, interfering with the blood supply that nourishes the retina. The damaged retina then signals the eye to produce new blood vessels. These new blood vessels are weak. When they break, they can bleed into the vitreous. This breakage can lead to scar tissue that pulls on the retina, causing further damage and sometimes causing the retina to pull away from the eye's blood-rich wall.

If floaters and flashing lights appear, a small hole may have occurred in the retina that could eventually cause the retina to detach. Because the retina needs continuous contact with the eye's blood-rich layer, a detached retina can cause total blindness within the eye unless surgery occurs rather quickly. Left untreated, the disease can progress rapidly and result in severe vision loss.

The course of treatment will be determined by the type and severity of the condition. For mild to moderate non-proliferative diabetic retinopathy, doctors may choose not to treat it and monitor any progression. When caught at the early stage, progression can be slowed or stopped by effective diabetes management.

For proliferative diabetic retinopathy or onset of macular edema, treatment will be necessary to slow the damage. There are several treatment options, including vascular endothelial growth factor (VEGF) medication injections, photocoagulation, also known as focal laser treatment, pan-retinal photocoagulation, which is often called scatter laser treatment, or a surgical procedure called a vitrectomy. These treatments may be used in conjunction with each other or be part of a progressive treatment plan.

Because diabetes is a chronic condition, there is potential for diabetic retinopathy to progress. Regular appointments with a specialist are needed to monitor the condition and adjust the treatment plan. Some patients can stop the progression with effective diabetes management and ophthalmological treatments.

The constant fluctuation in vision that accompanies diabetic retinopathy can interfere with many, if not most, everyday activities. Blurred vision from

the macula's swelling can affect reading, television watching, color matching, and crafting. Reduced acuity can interfere with seeing the markings on an insulin syringe or reading on a glucose monitor. Patchy vision and blind spots can make it difficult to visually search for items on a counter or floor or in faces in a room. Decreased depth perception can make it difficult to see curbs and steps and safely walk without a mobility tool, such as a white cane.

Stroke-Related Vision Loss

A brief description of how the eye sees can help explain how a stroke affects vision. The retinal cells and optic nerve fibers on each eye's right side see the left side of the world. The cells and fibers on the left side of each eye see the right side of the world. The cells and fibers on the upper part of each eye see the lower part of the world, and the cells and fibers on the lower part of the eye see the upper part of the world. A stroke causes damage to the optic nerve fibers, not to the eye itself. A stroke can occur in various locations along the optic nerve because the nerve fibers that transmit vision have a long course from the eyes to the brain's vision area. The type of vision loss (right side, left side, top, or bottom of the visual field) depends on where the stroke occurs along the optic nerve. This type of loss is called hemianopsia.

Someone with hemianopsia can easily overlook things on a counter, in an oven, or a drawer, but can also compensate for the blind side of their vision by visually searching (scanning) frequently. When walking, scanning can prevent bumping into a pole, missing a doorway, or overlooking someone standing on a sidewalk.

Sub-Conjunctival Hemorrhages

Subconjunctival hemorrhages become more common as we age and occur when small blood vessels break and create a large red blotch between the conjunctiva and the sclera. Some risk factors for these hemorrhages are diabetes, high blood pressure, and the use of blood thinners. Though a hemorrhage may look frightening, it is not painful or harmful to the eye. The eye will absorb the leaked blood within two or three weeks without treatment.

Charles Bonnet Syndrome

Many vision professionals have found that a significant number of adults who acquire low vision later in life from a variety of retinal diseases, specifically age-related macular degeneration, diabetic retinopathy, and

glaucoma, experience Charles Bonnet Syndrome (CBS), a condition that causes vivid, recurring visual hallucinations. Although CBS is not an eye disease, the percentage of people who experience it is so significant it merits mentioning. A variety of studies have shown 11 to 27 percent of people with retinal diseases experienced CBS. Studies have shown that as many as 21% of AMD patients have CBS related visual hallucinations at least once a month.

Visual hallucinations associated with CBS range from colorful, dreamlike, animated images to everyday images like people, animals, vehicles, and houses. Those who see experience CBS-related visions know that the images are not real. People with CBS may initially second-guess themselves but ultimately accept that these images have no substance.

Charles Bonnet Syndrome does not have a cure or treatment. People who experience CBS are not crazy or developing dementia. If you have a retina disease and are experiencing visual hallucinations, contact your eye care physician for a referral to a counselor familiar with CBS.

Summary

In this lesson, we looked at the parts of the eye and how various eye conditions affect those parts. Knowing this information will help you better understand your eye condition and more easily communicate with your doctor. You may also find it helpful to share a brief explanation of your visual condition with family and friends. In later lessons, you will learn more about how your vision functions, how to maximize your remaining vision, and how to compensate for the vision you have lost.

Suggested Activities

Answer the following questions:

- What is the name of your eye condition/s?
- Which parts of the eye are affected?
- Make a list of any questions or concerns you have about your vision condition, which you can share with your doctor or other rehabilitation professionals.
- Read "Lesson 2: Navigating Eyecare, Medical Eye Treatment and Rehabilitation Training" to gain information about preparing for appointments and professionals who can help.

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.

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)
- 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!

Lesson 3: Tools in Your Toolbox, Using Your 10 Senses to Perform Everyday Tasks

Introduction

Is it difficult to insert the key into your front door? Do you worry about identifying your medications correctly? Do you lack confidence in matching your clothes? If so, it's time to take charge of every area of your life as an individual who is blind or visually impaired. You will be pleased to know that you don't need to learn how to do hundreds of tasks all over again. Every task you performed as a sighted person, and any new task can be accomplished with little or no vision.

Virtually no task is completed using only vision. Ninety-nine percent of all daily activities depend on multiple senses and movement from fingers, hands, arms, shoulders, legs, and feet. Though you may have little or no vision, your body still remembers how to perform every task you have ever done regularly. This is called muscle memory. It can be used to insert a key to unlock a door, identify medications, and enjoy favorite leisure activities such as crocheting and pottery.

Lesson Goals

- Identify and describe the ten senses

- Collect at least 25 examples of ways you can use your ten senses to perform daily tasks.

So what is the visual impairment toolbox? It works something like the toolbox, which is kept in the garage or utility room. When a door handle is loose, a person will look in the toolbox and get out one or two tools to do the job. It doesn't take every tool in the utility room to tighten the screw in the door handle, just the right ones for the job. Similarly, it will take different visual impairment toolbox tools to wash dishes, match clothes, or shave. This lesson discusses the toolbox containing ten senses and describes how to use them to do almost every task as a visually impaired person.

The Senses

Most of us are familiar with the five primary senses: vision (ocular), touch (tactile), hearing (auditory), smell (olfactory), and taste (gustatory). However, there are ten senses that people use every day. Several may be less familiar. For example, muscle memory incorporates the action of three senses (kinesthetic, haptic, and proprioceptive). Stereognosis enables people to identify three-dimensional objects with their hands. The vestibular sense controls balance.

This lesson will demonstrate the importance of every sense and how they impact a visually impaired person's ability to function. Each sense is described in this lesson, and examples are provided for how to use them. Every task people do requires the use of several senses. Learning how to interpret information from all senses will enable individuals to live more productively and independently. For this lesson, the common names for the senses will be used.

The 10 Senses

- Visual (Vision) - processes light that enters the eyes into electrical impulses carried by the optic nerve to the brain's vision center, where the electrical impulses are converted into images.
- Auditory (Hearing) - processes sound that enters the ears' canals into electrical impulses carried to the brain by the auditory nerve.
- Tactile (Two-Dimensional Touch) - provides the ability to discriminate among heat, cold, wet, and dry and identify two-dimensional objects through the skin's nerves.
- Stereognosis (Three-dimensional Touch) - provides the ability to identify a three-dimensional object with the hands using the object's weight, form, texture, and density.

- Olfactory (Smell) - provides the ability to discriminate among smells and flavors. The sense of smell, not taste, provides flavor.
- Gustatory (Taste) - provides the ability to recognize texture, size, and contour through the nerves in the tip of the tongue and sides of the mouth.
- Kinesthetic - makes the whole body aware of how its parts relate to space.
- Proprioceptive - turns information from muscles, joints, and tendons into specific action.
- Haptic - the ability to differentiate and match objects of similar size, length, texture, and weight through touch and movement. The kinesthetic, proprioceptive, and haptic senses are the three senses known collectively to make up muscle memory. They never function independently of each other.
- Vestibular (Balance) - provides information about the body's movement and relation to gravity through receptors in the inner ears.

Sense of Hearing

For the person with vision loss, almost every sound has a purpose or represents something specific. For example, the hum of a refrigerator and the hum of a dishwasher sound different. Distinguishing these two appliances can help people remain oriented in the kitchen.

Begin paying attention to sounds in the environment. What causes the sound? Where does the sound come from? What are the qualities of the sound? In other words, is it the dishwasher or toilet making the sound? Is the sound behind you, above your head, or in another room? Is it the hum of an appliance, the clink of something dropped on the floor, or the rush of running water? Notice the sound of the toaster when the bread pops up. When making coffee, notice the sound of the brewed coffee dripping into the pot. The sense of hearing can become a primary tool for performing many tasks.

Practice listening to and identifying the sounds in the environment. In time people can learn to discriminate between sounds. They can even learn to recognize when a familiar sound doesn't sound right. For example, if a burner on the gas stove makes the clicking sound but doesn't make the swish sound, that means the gas did not ignite. If the coffeemaker gets turned on and doesn't sound right when the coffee begins to drip, perhaps the pot didn't get placed under the spout.

Echolocation

Echolocation is not another sense but is another way people can use their sense of hearing. As individuals move about, speak, or make any noise, the sound is reflected off walls, furniture, trees, buildings, and other surfaces back to the ears. In places like bathrooms, closets, and narrow hallways, the sound will bounce back to the ears quickly and give the perception of being closed-in or in a small room.

When entering a living room or another large room, the opposite sensation is experienced. In a large room or open space, sound travels farther before it comes back to the ears. In time, people can tell when they are approaching a closed door or passing a car parked along the street, or having left an open area and passing along the building wall. Some people like to hum a song or make some noise to help detect objects in their pathway. Everyone is unique and will need to experiment with what works best for them. Begin by using echolocation when getting around at home.

Adding Sounds to the Environment

Adding a sound to the environment can help with orientation. This can be done in many ways. Think about what areas in the home or outside are challenging to navigate. Some basic suggestions include turning on a radio in a large room or placing a loud ticking clock at the end of a long hallway. Wind chimes or a radio on the patio can help guide a person back to their house after working in the yard.

Sense of Touch

When a person has little or no vision, their sense of touch is vital to performing many tasks. The entire body, including hands, feet, legs, arms, face, etc., have nerve endings that react to cold/heat, wet/dry, soft/rough, heavy/light, and so on. This sense can be used in many ways to locate and identify things in the environment. For example, people can locate a sticky spot of toothpaste on the bathroom counter by running their fingers over the surface. They can set the security system in their home by running their fingers across the keypad to feel the buttons.

Clothing can be recognized by touch. For example, the brown suit's texture may differ from that of the gray or navy suit. The navy and gray suits may be similar, but the buttons or pants pockets may be different. An excellent way to get started in strengthening this sense is to use the sense of touch to select clothing for a specific outfit.

The sense of touch is not exclusively located in the hands, even though

people use it most. Think of what information you can get through the sense of touch with your feet. People can tell the difference if they are walking on carpet, hardwood, or tile without effort. That sense can provide helpful information and assist with staying oriented. With practice, some visually impaired individuals can identify different surfaces they are walking on through their feet, even while wearing shoes. It is not uncommon for a blind or visually impaired person to feel the difference between driveways, sidewalks, and streets after receiving orientation and mobility training.

3-Dimensional Touch

The sense used most frequently to identify and differentiate objects with the hands is three-dimensional touch. Using just the fingers, a person can learn to distinguish a quarter from a nickel and a penny from a dime. Quarters and dimes have rough edges, while nickels and pennies have smooth edges. Nickels are a bit larger and thicker than pennies. Another example is differentiating small objects like keys. People can distinguish the door key from a luggage key if one is square and the other has scalloped edges.

Medication is another area in which a sense of touch can be helpful. The medications might be shaped differently from one another. One may be a capsule; another might be shaped like a football, another small and oval, and another round and flat on top and bottom. When people have two medications that are difficult to distinguish from one another, one way to tell them apart is to wrap a rubber band around one bottle.

Sense of Smell

People don't often consider all of how they use their sense of smell. Smell is used to identify items, give information about an item, and other practical uses in addition to enabling us to enjoy foods and fragrances. The sense of smell alerts people to fire, spoiled milk, and trash that needs to go in the garbage can.

Smell is essential to daily life and the safety of people with little or no vision. A person who is visually impaired depends on their sense of smell often, especially when preparing food. When cooking a soup that calls for several spices, a visually impaired person can use their sense of smell to find the ones they need.

If the burner on a gas stove did not ignite, the rotten egg odor is warning that gas is escaping. A burning smell coming from the vacuum may indicate that something is caught in the beater bar. These examples demonstrate the wide variety of tasks that the sense of smell can help facilitate. This tool

will help provide information and give safety cues. Start paying attention to ways that sense of smell is already assisting in daily life.

Sense of Taste

The sense of smell is required for a strong sense of taste. That's why food doesn't taste as good as usual when we have a cold. The sense of taste for sighted and visually impaired individuals is essential when eating. The sense of taste provides the information needed to identify if something is spicy, bitter, or contains food you do not like. Only through the sense of taste can a person tell if they have added too much salt or pepper to a dish they are preparing. The tongue's tip is very sensitive to cold and hot, which prevents people from burning their mouth. Try being more aware of how the sense of taste assists in eating and food preparation to utilize this tool more effectively.

Muscle Memory

We call muscle memory an action produced by three senses: kinesthetic, proprioceptive, and haptic. They cannot function independently. These three senses and the sense of touch provide the visually impaired individual with the most complete and reliable information.

Every task requiring some action depends on movements from your muscles, joints, and tendons from various parts of your body. For example, to hang a picture, it takes repetitive blows of the hammer against the nail created by muscles, joints, and tendons in your hand, arm, and shoulder. For people who have done that task many times in their life, the movements are natural and take little effort or thought. Muscle memory allows people to do tasks easily if they do it in the same way they repeatedly have. Think about examples in daily life when muscle memory played a role.

How often in a person's lifetime will they do the dishes, sign their name, walk to the mailbox, tie a shoelace, button a shirt, and reach for the snooze button on their alarm in the dark? How much thought goes into those tasks? Almost none. People do them automatically. This is muscle memory.

Most people have had the experience of washing the dishes and a dish slips. Most of the time, we reflexively can reach down and catch it before it hits the floor. This works for people who are blind in the same way it works for people with good vision because of muscle memory. Visually impaired people can still use muscle memory to sign their name, slice a tomato, ride

a bike, or play golf.

Start paying attention to all of the tasks that are done using muscle memory. This is one of our most valuable tools, and it should be used to its full potential. It's not uncommon for people to second guess their muscle memory when experiencing vision loss. Still, it helps to take a moment to think of how they could do necessary activities without relying on vision in the past. An excellent example of this is when we wake up in the middle of the night and walk to the bathroom in the dark with our eyes still closed and have no difficulties because our body has walked that path so many times it's ingrained.

Sense of Balance

Our sense of balance is often overlooked, but it's crucial for everything we do. Whether sitting, standing, or walking, virtually no task can be performed without balance. Balance is vital to safety as well as daily activities. It isn't easy to function or feel confident getting around and being active if the sense of balance is compromised. However, it is a sense which is often taken for granted until an issue with balance arises.

Numerous components contribute to our sense of balance, and vision is one of those primary components. This is why it is common for balance issues to develop for people with visual impairments. However, the human body is a master of compensation. The loss of vision can be compensated for, and balance can be restored or improved. It just takes work and practice. Physical therapy and balance training exercises can help a person develop a good sense of balance despite vision loss. Whether or not a person is experiencing balance problems, it is vital to keep this tool sharp. Numerous daily habits such as yoga or tai chi can increase balance and allow this sense to reach its potential.

Sense of Sight

Because this lesson's primary goal is to introduce people to ways to use their non-visual senses to perform most tasks, vision is not discussed in this lesson. However, people who have some usable vision are encouraged to develop the vision efficiently and with other senses. To explain lighting, size, contrast, and other essential low vision techniques to include in the toolbox, read the methods for maximizing low vision discussed in later lessons.

Summary

To better understand each sense and how they function, this lesson has described them individually and given examples that demonstrate each. Most tasks, however, utilize two or more of the ten senses.

Choose a couple of activities and think about the different senses you can use to perform those tasks. We have provided an example below. This initially takes thought and awareness, but you won't have to think about it in time. Using your non-visual senses will become as natural as riding a bike without looking at the pedals

Activity Example

You wake up hungry but a little later than you intended. You decide to have a quick breakfast of an English muffin with peanut butter and a glass of orange juice. You quickly find the English muffins because your sense of touch lets you identify them by their round shape. You place one half on each side of the toaster and press the lever. While the muffin is toasting, you locate the round plastic jar of peanut butter. You decide to add a few raisins, so you grab the rectangular box of raisins sitting next to the jar of peanut butter. Next, to spread the peanut butter, you identify a knife by its shape. These are three items you've retrieved using your three-dimensional sense. As you take a plate from the cabinet, you hear the toaster pop up, and you know your muffin is ready. As you open the jar of peanut butter, its familiar smell rises to your nose. You spread some peanut butter on your muffin and sprinkle a few raisins on top. Before getting your orange juice, you put the peanut butter and raisins back in the places where you found them so that they will be easy to find the next time. You grab a tall glass and set it next to your muffin. In the refrigerator, you have milk and orange juice. Your milk is in a plastic bottle with a handle, and the orange juice is in a square carton, so you have no trouble telling them apart. As you pour the orange juice, the citrus smell confirms you got the right carton.

Along with your senses of touch, smell, hearing, three-dimensional touch, and taste, you used balance and muscle memory to grab the items you needed, spread the peanut butter, and pour the orange juice, creating a delicious breakfast!

In the next lesson, you will learn more techniques and examples of how to use them. These techniques also belong in the toolbox, along with your ten senses. With these tools, you can do almost any task you want.

Suggested Activities

- As you go through your daily routine, identify which of your senses you are using for each task.
- Try completing a task, particularly one that you find difficult, and see if you can use any tips from this lesson to make it easier.
- Close your eyes and attempt to do a task with no vision at all. You might be surprised how adaptable you are.

Lesson 4: Tools in Your Toolbox, Techniques to Perform Everyday Tasks

Introduction

Is it difficult to insert the key into your front door? Do you have difficulty locating buttons on the TV remote? Do you wonder if your dishes are spotless after washing them? Similar questions were asked at the beginning of Lesson 3, where you learned that you could use your senses to help accomplish everyday tasks. Lesson 4 will introduce techniques to add to your toolbox. Some of the methods covered in this lesson are visualization, spatial orientation, systematic search patterns, landmarks, and, of the utmost importance, organization.

Lesson Goals

- Identify and describe basic techniques for everyday tasks
- Collect examples of ways to use these basic techniques in everyday life

Visualization

Visualization is not part of the sense of vision. However, it is fundamental to learning to live with vision loss. Individuals with adult-onset vision loss have many visual memories that they can utilize. For example, a person who lived in the same home before their vision loss can use their visual memory to help them remember the home's layout and details. This can be extremely helpful when navigating around the house or doing activities within the home. Practice visualizing by starting with one room or section of the room and recall everything you can about that space. Think about the kitchen. How is it laid out? Is it a square or long and narrow? Where is the stove in relation to the sink? Is there a window? What color are the

counters, floors, cabinets, and appliances? What is on the countertops? Go into as much detail as possible and try to visualize each aspect. This can be done for every common area to practice using visualization as a tool.

Another technique is to visualize a task. Choose a task performed frequently before losing vision, such as riding a bike, cooking, or doing the dishes. Now, imagine doing that task and, at the same time, imagine how it felt when doing the task. Be as detailed and thorough as possible. This technique will help in performing familiar tasks in a new way. Visualization can also be utilized in unfamiliar spaces or with unfamiliar tasks. The only difference is that the information will not be coming from memory; it will need to be provided by exploration or having another person describe the layout and details. The technique for this will be discussed in a later lesson.

Spatial Orientation & Organization

Spatial orientation is the ability of a person who is blind to develop fluid movements when performing a task within a given space without the use of vision. When someone has excellent spatial orientation, movements are so fluid and natural, and it may look as if he can see perfectly well while performing the task. This ability should not be surprising. People can do this frequently without effort. Many people who wear glasses can reach for their glasses on the bedside table without looking or turning on a light. In familiar settings or situations, people can know where they are related to the objects around them without using their vision.

Associated with spatial orientation is the concept of spatial organization. This technique refers to organizing a workspace to move within the given space efficiently. For example, when making cookies, use a tray to assemble the ingredients and equipment needed. The tray provides a defined boundary, which creates spatial organization for doing the tasks. Place the mixing bowl, measuring spoons, and measuring cups on the tray. Using spatial orientation, place the needed ingredients around the outside of the tray in the order they appear in the recipe. This method allows you to move easily from one item to the next, avoiding knocking anything over. As each ingredient is used, put it away. This same technique can be used for many tasks, such as arranging items for a sewing project, paying bills, or changing a light bulb.

Another technique associated with spatial orientation is "body-size space." Most tasks can be comfortably performed within a body-size space or a series of body-size spaces. A body-size space is one in which tasks can be performed within a comfortable reach. For example, the tray just mentioned

is a body-size space. A kitchen stove is slightly wider than the average human body, and all stove parts can be operated with a comfortable reach. Kitchens are typically arranged in a series of body-size spaces. The stove, some refrigerators, the dishwasher, and microwave are oriented to the area in which a person can reach comfortably. Drawers, cabinet doors, and sinks and other appliances, mirrors, windows, doors, and most furniture are also approximately the same sizes.

Combine body-size space, spatial orientation, spatial organization, and muscle memory, and you have the critical tools needed to do most tasks. For example, sweeping the kitchen floor is more manageable if you divide it into small body-size grid sections and then sweep each small section using overlapping strokes. Mirrors, windows, and sliding glass doors can be cleaned using these same methods. These same techniques can also be applied to outdoor tasks. For example, the yard is easier to mow if you divide it into small sections with easily visible section markers.

Systematic Search Patterns

For some people with visual impairment, locating lost or dropped items can be a challenge. People are used to scanning with their vision and finding the item before moving to get it. That isn't effective if the person has low vision. Therefore, systematic searching patterns are taught to help make this task easier. When locating a cup on the dinner table, a pill bottle on the bathroom counter, or a sock in the dryer, searching with hands in a systematic pattern is critical.

The best technique to use when searching on a flat surface is the grid pattern, which allows us to systematically search on a table or counter, moving from front to back and left to right, ensuring full coverage of the area. This technique is the visually impaired person's version of visually scanning the environment. It is best to make a loose fist and keep your hand touching the surface of the area you are searching, to prevent issues such as knocking something over while searching.

This technique needs some slight modification when searching on surfaces that are not flat or checking appliances such as a washer, dryer, microwave, or oven. Concentric circles can be used instead of the grid pattern where appropriate. This is done by starting in the center of a space and then making overlapping circles with the hand until the entire surface, or sectioned area is covered. It is also possible to use both hands to cover the surface area more quickly as long as this does not impact balance.

The same techniques can be used for cleaning and performing other tasks. For example, when cleaning the floor, it can be divided into a grid the same way as described for searching. When using these patterns to wash dishes, the concentric circle pattern is typically more effective. Move the cloth or sponge in circular motions over one side of a dish. As you move over the surface, make sure the cleaning movements overlap the previous ones. Turn the dish over and use the same technique on the other side. The sense of touch can be used to find missed spots; they will feel sticky, greasy, or grimy. Wash those spots again and rinse.

Hand-to-Hand Coordination

Hand-to-hand coordination is the visually impaired person's alternative to eye-hand coordination. This is done by using both hands, one as a guide and the other to perform the task. For example, to insert a key in a lock, locate and place your non-dominant hand's index finger over the keyhole. With your dominant hand, bring the key to the finger over the hole. Remove the finger and insert the key. This same technique can be used to replace a light bulb, insert a screwdriver into a screw, put bread into a toaster, and other similar tasks. What tasks can you think of where hand-to-hand coordination might help?

Landmarks and Clues

The standard definition landmark is anything permanent that helps identify where a person is, such as a fire hydrant or railroad tracks located a block from the local post office. A clue is similar to a landmark, but it can be moved or function intermittently. For example, finding the drug store by the aroma of coffee from the coffee shop next door doesn't work if the coffee shop is closed.

Landmarks and clues are generally thought of as techniques you use when traveling in places outside the home. However, they can be utilized just as frequently in the household setting. In the home, the front door, the kitchen stove, or the fireplace can serve as landmarks and good reference points for indoor orientation. Sounds in the home or things that may be moved, such as furniture in the living room, are still helpful but are considered clues because they aren't permanent. Anything changeable, such as a sound or movable item, is a useful clue but cannot be counted on in the same way as a landmark. For example, the refrigerator serves as a landmark, but the family room's recliner is just a clue. The wind chimes used for staying oriented in the backyard aren't helpful if there is no wind, but the large tree near the back steps can be considered a landmark.

The concept of orientation by clues and landmarks is not just for getting around. It can also be used for small items and locating something in particular to the things around it. For example, if it is difficult to navigate and identify buttons on the remote, try using landmarks. First, scan the entire remote, using your fingers in a systematic search pattern. Pay attention to how the buttons are arranged. Are they organized in groups? Are there any you've never used? Where are these groups located—in the middle, at the top, or the bottom? Are some of the buttons square while others are round or shaped like arrows? Are any groups arranged like a telephone keypad?

It is helpful to have someone with vision help you isolate the buttons that get used most frequently. Mark them with a piece of tape, rubber band, or some other tactile marking. Many people mark the number five of the keypad with a raised dot and use it as a landmark to move to the other numbers. Don't mark all of the buttons, just the ones that can help identify the others.

Organization

Organization is one of the most essential tools for a person who is blind or visually impaired. Think of the old expression, "everything has a place and everything in its place." Following this rule saves time, reduces frustration, improves safety, and is essential for people with vision loss. Some of the organization methods are different for people with vision loss because the purpose of organization is to reduce confusion and help identify items. Items need to be grouped by various categories, such as organizing clothes by color rather than style or matching items. Containers to confine items are also vital in organizing for people with vision loss. It might not be helpful to have all of your socks together in one drawer if you can't tell them apart. Using bags, baskets, plastic containers, and dividers will improve organization. Methods for organization are covered in greater detail in lesson 9.

Summary

This lesson covers several tools for people with visual impairment to use for daily tasks. Most activities and tasks will use multiple tools at the same time. Some concepts, such as spatial orientation, are utilized in all tasks but are more critical at times. Methods such as visualization are probably familiar and will need to be more frequently used. Hand-to-hand coordination takes more practice. The last and most important tool to add is common sense. You have a toolbox filled with tools. Use them all and keep

adding to your toolbox. You have likely developed adaptations as you have learned to cope with vision loss. If these work and are safe, keep using them, and keep building additional adaptive strategies. With practice, whatever tasks you are trying to accomplish, you will have the necessary tools to make it possible.

Suggested Activities

- Practice visualizing areas in or around your home, which are difficult to navigate. Spend 10 minutes going through all of the details.
- Try using the tools described in this lesson with your daily tasks. Identify which ones you are applying for each activity.
- Make a list of your home areas that need to be organized so you'll be prepared when you get to that lesson.

Lesson 5: Orientation and Safety in the Home

Introduction

Many newly visually impaired people are concerned about safely getting from place to place and about avoiding accidents in the home. These two concerns are central to virtually every other daily activity. This lesson introduces several techniques for getting around in your home without injury. Many of these techniques use senses and other skills discussed in lessons 3 and 4. This lesson also offers many tips that aid in accident prevention.

Lesson Goals

- Demonstrate how to protect the upper and lower body in at least two situations.
- Navigate the home safely using protective techniques, trailing, and squaring-off.
- Compare and contrast the methods for locating dropped objects and systematically searching for items on a counter, table, desk, etc.
- List ways to make a home safer for a visually impaired person.

Orientation and Mobility

Orientation and mobility, commonly known as O&M, is specialized training that helps people with visual impairments learn or relearn the skills needed to travel safely and independently in the home and community. The

importance of these skills can't be overstated; they impact every area of daily life. O&M instructors teach how to maximize the use of all of the senses to know where you are and to get to where you want to go. When necessary, these specialists train people to use a long cane to travel safely along sidewalks, cross streets, and ride public transportation. If outdoor travel skills would be beneficial, it is recommended to obtain an O&M specialist's services. It is not advised and can be unsafe to purchase a long cane and use it without proper training from a trained orientation and mobility specialist. There are particular techniques and skills needed to safely and effectively use a long cane as a person with a visual impairment. Other orientation and mobility skills will be discussed in this lesson related to indoor and home orientation and safety. Services from an O&M instructor are not required for learning these other skills. Indoor orientation and mobility are also essential. Techniques for People with Visual Impairments for indoor safety will be covered in the next section, but many of these can be adapted for outdoor travel as well.

Protective Techniques

The upper and lower protective techniques are essential for your safety as you move about the home environment. These techniques prevent injury to the head, face, and torso from collisions with open drawers and doors or tables, chairs, and anything else that might arise. When learning these techniques, keep in mind that only a long cane held diagonally in front of you or the use of a walker will protect the feet, calves, and knees. Remember that only a long cane or dog guide will help a person detect stairs or other drop-offs.

In addition to using these techniques, it's essential to make sure all upper and lower cabinet doors and all drawers are completely closed at all times in your home. Leaving cabinet doors and drawers ajar can cause you to bump your head or bruise your body. Interior doors must be kept completely closed or completely open. Few things are more dangerous to a visually impaired person than a partially open door. It is important to ask everyone living in the house to follow these rules to ensure safety.

The Upper Body Protective Technique

When bending over, using the upper protective technique prevents accidents such as bumping the face on a counter, table, open cabinet door, or similar object. Even if a person has some usable vision, it's not worth taking the risk. It's better to make it a habit to use this technique every time.

To learn the upper protective technique, begin by positioning one of your arms so that it is parallel to the floor from shoulder to elbow. Next, bend that arm at the elbow, bringing the forearm diagonally across the body and bringing your hand about 10 inches in front of your face, with the back of your hand toward your face and your palm facing out. Point your fingers at a slight angle toward your face to protect them from injury. Maintaining this position when you bend forward allows the forearm to serve as a buffer should you collide with any surface or object. If arthritis or lack of strength prevents a person from maintaining this position, it can be modified or wear a hat or visor to protect the face.

The Lower Protective Technique

To protect the torso using the lower protective technique, start by reaching the arm straight out in front at about a 45-degree angle, like reaching to shake hands with someone. While keeping it extended, angle the arm across your body diagonally and away from the body about a foot. Face the palm toward the body just below the waist with the fingers curled slightly inward. The back of the forearm and hand will protect the middle of your body from contact with chairs, tables, and other thigh-high objects. If a person cannot extend their arm to protect their body while using either of these methods, objects such as a paper towel tube, rolled up magazine, or ruler can be used to provide complete coverage.

Trailing

Trailing is a technique that allows a person to keep oriented by staying in contact with a wall or other surface in the environment. It can be useful in situations such as walking in a straight line down a hallway or navigating around the counter in the kitchen. Trailing also provides some protection from random objects. To use the trailing technique, stand approximately 6 inches from a wall. Extend the arm closest to the wall about a foot in front of your body at the hip level. Hold your hand with the palm toward the floor, and then cup your fingers in a loose fist toward the palm to protect your fingers from any object they might encounter. Place the side of this hand against the wall and allow it to move along the wall lightly as you walk forward.

Orient yourself by visualizing any landmarks that may be encountered along the wall. Perhaps there is a closet door or protruding object that your hand may come across along the way. Landmarks such as a closet door can be helpful with navigating. For example, if there are two similar

hallways, but only one has a closet, it provides an easy way to differentiate. When you come to an open doorway, maintain your direction, and keep going. With a couple of steps, you will reach the other side, and you can continue trailing the wall. For safety purposes when trailing, it's recommended that you use the upper protective technique with your other arm to prevent accidental collisions as you explore various parts of your home. Again, use something as an extension of your arm if necessary.

Squaring Off

This technique can be beneficial when going from one location to another across a large, open space. Squaring off involves aligning or positioning your body in relation to a specific object or location in a room and then walking in a straight line toward the item or location. For example, this technique can be used when the refrigerator is more than three steps across the kitchen from the stove. Place your back against the refrigerator door and walk straight across the opening toward the stove, visualizing it in front of you. As you approach the stove, use the lower protective technique to protect your body from crashing into the stove. Try this technique in other rooms of your home as well as the kitchen. This method will need to be adjusted depending on the landmark being used to square off. At times it may be necessary to align the side of your body or the back of your legs with an object before walking across the open space. This technique is helpful when learning a new environment or adjusting to a decrease in vision. Keep in mind that it's essential to use your other senses and concepts such as echolocation, which were discussed in previous lessons, to help with orientation. Eventually, with practice, as confidence develops, walking diagonally from one place to another across an open space without this technique may be comfortable.

Room Familiarization

The room familiarization technique can be used for new environments or places where a person is not used to navigating independently with vision loss. It is not uncommon to use this technique in the home after a decrease in vision. First, stand in the doorway and visualize the room if it is familiar or have someone describe the layout if it is a new environment. As items in the room are described or recalled, point to them with one hand while remaining in the doorway. Once a clear map of the space can be visualized, trail around the perimeter of the room. For people who use a long cane, it's recommended that they hold it in one hand diagonally across their body while using the trailing technique with the other. The room

features, such as furniture arranged against the wall, a closet, or a window, may serve as landmarks to aid your orientation. When a piece of furniture is located while trailing, stop and carefully examine it using tactile skills. Use search techniques and the grid pattern described in the previous lesson to determine if items are arranged on top of furniture surfaces. Continue around the room until everything along the perimeter of the room has been identified. Next, move to the center of the room and explore everything there. If a room has furnishings in the center of the room, such as a dining room or family room, use the squaring off technique along with the cane or lower protective technique until you locate the furniture.

Locating Dropped Objects

Many newly visually impaired or blind individuals experience frustration when trying to find things they've dropped on a counter, table, or, especially, the floor. The searching methods described in the previous lesson can be used for this, such as the grid pattern or concentric circle method. The fan technique described below is also an effective strategy. It's helpful to know all of these tools so that the appropriate one can be used depending on circumstances.

Fan Technique

When something drops, immediately listen to hear where it falls. Depending on what item falls and the type of surface it falls on, the sound will differ. Another thing to listen for is if the item rolls or slides once it hits the floor or other surface. When the sound is identified, face the sound, and point your finger in that direction. Pointing can help pinpoint the location and keep orientation as you begin to move. Take a few steps toward the suspected location.

Next, using the upper body protective technique, safely and cautiously bend at the knees, squat, or kneel to reach the floor with your hands. Begin making small, then progressively larger circular movements with your hands on the floor directly in front of you, then to the left and right. Move forward, continuing to use a fan-like pattern until you locate the item. A broom can be used to find the item for people who are uncomfortable or unable to bend over or squat. When you feel resistance or hear the broom move the item, slowly and gently sweep the item out of the way toward a cabinet or stable piece of furniture, hold on, and then retrieve the item. Or use the broom and a long-handled dustpan to pick the item up or sweep the item out of the way and allow someone to pick it up later. People with

hearing impairments who cannot pinpoint a dropped object's location by sound can use a broom with overlapping strokes in the area where the object fell. When resistance is felt against the broom, check to see if the object caused it. Practice dropping various items and locating them to get practice with this technique.

Safety Tips

Several basic home modifications and habits can be developed to make a visually impaired person safer in their home environment. These are a few suggestions based on what works well for many people. However, each person needs to determine which of these would be beneficial to adopt based on individual circumstances.

Non-slip rugs can be used in various ways around the home to help with orientation. They can serve as a tactile marker since they will contrast with the flooring's texture, but if high contrast colors are used, they may also serve as a visual cue to highlight an area. Rugs can be placed under groupings of furniture to give a tactile cue when walking through the room. Some individuals will also use small rugs in front of doorways, sinks, and other commonly used areas of the home. When using rugs for orientation, the most important thing is to make sure they will not become a tripping hazard. All rugs should be non-slip and be tacked down on the edges. It may not be recommended to use this method for people with mobility aids such as walkers.

Stairs, hallways, and frequently traveled pathways should be kept clear and free of all clutter. Many people have a habit of leaving something on the stairs that they plan to take up or down with them the next time they go. These can be dangerous habits. Safety needs to come first, so take the time to identify any walkways which are cluttered. Methods for organization will be covered in a later lesson, so the first step is to get items off the floor. Lighting, contrasting colors, and textures can also be used around the home in various ways to create a safer environment. For people with some remaining vision, sufficient lighting should be used above stairways and other areas, presenting a safety hazard. High contrast colors and various textures can also be used in strategic areas. For example, non-slip tape in a contrasting color can be placed on the edge of steps to make them more visible. There is a type of tape, which feels a lot like sandpaper, which can be used outdoors for porches or decks.

Discussing safety concerns with people in the household and describing challenges related to vision loss can be beneficial. Most family members will be more aware and conscientious if they understand what changes need to be made. It can help to have family members participate in training lessons or do a blindfold experience to gain more insight. However, in households where people often forget to close cabinets, dishwasher doors, or push in their chairs at the table, methods may need to be utilized to maintain safety. The protective techniques learned earlier in this lesson are helpful, but people will rarely use them every time they walk through their homes once they are comfortable. Some devices can be put on cabinet doors, which will alert if a door has been left open for more than the programmed time. Magnetic door stops can be used on interior doors that do not stay open entirely independently. This will make it easier to keep doors fully open or closed and prevent someone from walking into a partially open door.

As an added safety measure, individuals can use their long cane in the home if they know that things are often left out or relocated. This is a common precaution when small children in the house leave toys on the floor.

Additional safety measures will be discussed in other lessons about particular tasks such as cooking or household chores. One basic concept is that sharp objects such as knives and scissors should never be left where the blades or points can come into accidental contact with any part of your body. For example, sharp knives should be placed behind the cutting board, not on it, when slicing vegetables, or placed behind the kitchen faucet, not in the sink when washing dishes. There will be more information on this topic in later lessons.

The most important tip is remembering the rule, "Everything has a place and everything in its place." This rule will be described in detail in lesson 9, but it's mentioned here because its use can prevent accidents.

Summary

Understandably, you may be concerned about safely getting from place to place and avoiding accidents as a newly visually impaired person. Orientation and mobility, commonly known as O&M, is specialized training that helps people with visual impairments learn or relearn the skills needed to travel safely and independently in the home and community. This lesson

reviewed several orientation techniques that can help ensure safety in the home and other environments. These include the protective technique, trailing, methods for finding dropped objects, and using room familiarization. It is again important to point out that a long white cane or a dog guide is an essential mobility tool for ensuring independence and safety in unfamiliar areas when functional vision cannot be used effectively. A qualified O&M specialist should teach the use of cane and mobility skills. With the right training and practice, a person with a visual impairment, including someone with no remaining vision, can travel independently.

Suggested Activities

To start incorporating these techniques into your daily life, try these activities:

- Using what was covered in this lesson, identify any safety concerns in or around your home.
- Discuss any problematic habits or concerns with other people in the house.
- Try using one of the protective techniques the next time you walk into the kitchen.

Lesson 6: Human Guide

Introduction

In lesson five, environmental orientation techniques used to move safely in the home and /or office were introduced. In this lesson, travel outside the home will be addressed. One way for an individual who is visually impaired to travel independently is to use a long cane. Instruction for using this mobility device is taught by an orientation and mobility (O&M) specialist. The second mode of independent travel used by some individuals is a dog guide. However, before either of those mobility modes are taught, people often learn to get around in unfamiliar environments using the human guide technique. Sometimes this technique might also be referred to as sighted guide. Although a guide is usually sighted, the term human guide is preferred since a visually impaired individual can also provide it.

Lesson Goals

- Travel safely and confidently using the Basic Human Guide Technique.
- Navigate safely through narrow passages such as open and closed doors assisted by a human guide.

- Open and close vehicle doors independently when traveling with a human guide.
- Seat yourself in restaurants, medical offices, etc., with human guide assistance.
- Walk safely up and down curbs and stairs assisted by a human guide.
- Speak up and instruct those who wish to guide you in the proper technique.

Basic Human Guide Technique

Perhaps you've been guided by well-meaning people who push or pull you, grab you by both arms, and attempt to seat you in a chair, or open a door and want you to lead the way into a dimly lit area where you've never been before. Traveling with a human guide familiar with the technique will eliminate these scenarios and give you a greater sense of safety and confidence. These guiding techniques can be taught to family, friends, or anyone who might serve as a guide in familiar or unfamiliar places. In the beginning, visually impaired individuals may find practicing with one trusted friend or family member helps them establish what works best. Each person is unique in their preferences and needs, so some adjustments to the standard technique may need to be made. Once safe and comfortable practices have been identified, the individual may find it helpful to ask others to guide them using these strategies. Note that some individuals may not need this type of assistance in all circumstances. It may be that some individuals only need this assistance at night or in dimly lit areas. Individuals who understand their functional difficulties will benefit most when explaining these difficulties to others and solicit assistance for those challenging situations. Remember the toolbox. Each tool may not need to be used every day, but adding this tool to the toolbox allows the user to be more prepared to face a wider variety of situations.

All guiding techniques start from a natural walking position. The individual being guided should bend their arm at a 90-degree angle, grasp the guide's arm just above their elbow, keep their thumb on the outside of the guide's arm, and their shoulder just behind the guide's shoulder. The guide can choose if they prefer to keep their arm hanging straight next to their body or bent at the elbow. The guide's arm must be held in a natural position close to their body so changes in walking pace and direction can be detected and when to step up or down. This configuration puts the guide a half-step ahead, enabling the individual to be guided to sense any changes in the

guide's pace or terrain, like stepping up, down, or gradually sloping. An easy way to connect with a guide's elbow is for the guide to touch the back of the individual's hand. The individual can trail up the guide's arm to above the elbow.

Once the guide's elbow is grasped, like holding a soda can, the individual can infer the guide's height. A guide's height is important primarily if the person being guided is taller than the guide. When this is the case, it will be necessary for the individual to ask the guide to let them know if they need to bend over to avoid an overhanging obstacle. It can also help ask a guide to give a verbal cue before they start to walk. If the guide is substantially shorter, for instance, if the guide is a child, an alternative is to place the hand on the guide's shoulder.

Individuals who have difficulty balancing or walking at a steady pace may want to use a modified technique for more support. This can be done by placing the individual's arm through the guide's bent arm and grip the guide's forearm. If more support is needed, lace your fingers together. The support from the guide's arm can stabilize and assist in balance. If necessary, a guide can further support with the other hand. The above method should only be used when the guide is strong and steady on their feet. Otherwise, the individual being guided could cause the guide to fall, leading to possible injury for both the individual and the guide. Individuals who experience unsteadiness when they walk or who have any balance issues may find it helpful to use a support cane or a walker instead of hoping a human guide will support them if they lose their balance.

Communication

Communication is vital for safety and smooth transitions while using a human guide. It's essential for the individual being guided to share information with the guide, such as preference on which side to be on or their walking speed. If, for example, a person has difficulty hearing in their left ear, they may want to walk on the guide's left side to put their good ear in the best position for hearing verbal cues from the guide. Perhaps, an individual may need more support on their left side to feel safer walking on the guide's right side. It can also be helpful to let the guide know what verbal cues are preferred and how much information is desired about the environment. Note that some individuals who provide human guide may also have preferences, and their needs should be accommodated. It is important to find the best arrangement for both individuals.

If a guide needs to walk away briefly, it can be beneficial to locate a comfortable location for the individual being guided to wait. Everyone has their preferences, so identifying if a chair or bench or if leaning against a wall or counter is preferable. Waiting in an open area without a landmark for reference can be problematic for individuals with limited vision. A guide should inform the visually impaired person they are leaving or returning using verbal communication to prevent misunderstandings.

Narrow Passages

The basic methods are used when walking in spaces wide enough to accommodate both people easily. However, there will be times when a narrower environment will force a change in positions. This frequently happens when walking through a restaurant or store. Using the human guide technique, the guide can inform the individual being guided by a narrow passage by both verbal cues and changing their arm position. When indicating a narrow passage, the guide should place their guiding arm behind them with their lower arm in the small of their back. This gives the person being guided the cue to walk directly behind the guide, indicating the individual being guided should slide their hand to the guide's wrist and extend their arm more to avoid stepping on the guide's heels. A modified version is to slide the hand down to the wrist and hold the guide's wrist with both hands. Some people prefer to step behind the guide and place their hand on the guide's shoulder if they need to walk behind them for an extended period, such as an airplane aisle. Depending on the environment, the guide and the person being guided may find different, more comfortable positions. As long as the position is safe and the person is directly behind the guide, it's up to individual preference. After traversing the narrow space, the guide returns their arm to the normal position signaling the person to change back to walking beside them.

Note that holding hands with the guide is not as safe as holding the arm or shoulder. The guide's movements, stepping up or down, are more discernable since the arm's upper part will move with the guide. The hand is further from the body, and the elbow or wrist can bend in positions that obscure these positional cues.

Closed Doors

When approaching a closed door, there may need to be adjustments to the guiding position. First, the guide should verbally identify if the door opens

towards or away from the line of travel and on which side of the travelers it will open. For example, the door is opening toward us on the left. This information will dictate the appropriate position. The individual being guided should be on the hinged side of the door. When approaching the door, if the person is on the handle side of the door, the guide should pause and let the visually impaired person step behind them and switch to the other side. When walking through doors that open away, the guide pushes the door open, and the person being guided reaches out with their free hand to hold the door open as they pass through. If the door opens towards the pair, the guide opens the door, and the visually impaired person reaches up with their free arm bent so the edge of the door will connect with their forearm. They can then grab the edge of the door and hold it open as they pass through, closing it behind them if necessary. Visualizing these scenarios and practicing can help navigate smoothly.

Car Doors

It is common for people to want to be courteous and open a car door for a visually impaired individual. However, it is easier and safer for them to do it themselves. If a human guide or other helpful person opens the door, there is no way to know where the door is, how far it is open, or where the sharp top corner is located. The safest and most effective way to handle this scenario is for a guide to place their hand on the car door handle and then allow the person to use their arm as a guide and trail it down to grasp the door handle themselves. Then the person takes a small step back as they open the door to prevent getting hit with the edge. It may be a good idea to use the upper protective technique with the free hand in an unfamiliar car to avoid injury. Once situated in the car, the person can reach out and pull their door closed.

Seating

Communication is crucial for smooth transitions from standing to sitting. The guide can describe the scene, giving brief but essential information. How high is the chair? Does it have arms or wheels? Does it swivel? Is the chair under a table? In a restaurant, are there one or two chairs on each side of the table? Are the tables close together, and are people sitting nearby? When approaching the chair from behind it, the guide should place their hand on the chair's back. The visually impaired person switches from the guiding position to trail down to the back of the chair. Then they can pull the chair out for themselves. If the person doesn't have the strength to pull out the chair, the guide can pull out the chair with their free hand before the

person trails to find the chair's back. Whether or not the chair is pulled out should be communicated verbally to avoid problems.

When transitioning into a booth, the guide places their hand on a corner of the table so the person can slide their hand from the arm to the table. The location and shape of the corner of the table will inform which side of the booth. The other hand can slide along the booth's seat as a guide to assist in getting seated.

Seating in medical facilities may be different, especially when the waiting room is full. Frequently, the chairs are arranged in back-to-back rows with several chairs in each row. If three or four consecutive chairs are available, the guide can lead directly to one of the center chairs. Taking small steps, find the chair's front edge by making contact with the front of the legs. Then turn and sit down. If balance is a problem, the individual should continue to hold onto the guide's arm until they are fully seated. When only single chairs are available, the guide should lead up to a chair with the side of the person's body perpendicular to the chair. This allows the guide to assist with seating without standing directly in front of the person seated in the adjacent chair. Again, good communication makes a difference in how well this works.

In every setting, the guide should communicate if a magazine, cat, or something else is lying in the seat. Just in case, it's best for the individual who is visually impaired to sweep the seat with one hand while using the upper protective technique with the other before sitting.

Curbs and Stairs

The first step when being guided up or down curbs and stairs is brief but effective communication. When encountering a curb, the guide should indicate if the step is up or down, low or high, and what is after the curb, such as grass, street, or sidewalk. Will there be an incline or decline afterward? All of this information can be provided in one brief sentence while approaching the curb. For example, we are approaching a curb, stepping up onto a sidewalk. Then the guide pauses before stepping up or down to give the person time to prepare. The guide always steps up or down first because it provides tactile information about how high the step is before they follow. When going up and down curbs and stairs, it's important to pause at the top and bottom every time before moving forward.

Providing information about stairs is equally helpful. Are they ascending or descending? Is there a handrail? Do the steps have contrasting textured edges that allow people with low vision to see and people with no vision to feel through their shoes? Are there only a few steps, or is it a long flight of stairs? The guide should lead to the handrail, which may mean that switching sides is necessary before approaching. The guide should pause while the handrail is located and then take the first step. They should always be one step ahead and pause at the end to give time to adjust. Some people may find it more comfortable to walk down the stairs without holding on to their guide. This is fine as long as there are no concerns about balance and the individual stays in contact with the handrail.

Safety Tips

The techniques provided in this lesson are considered the safest and most effective ways of being guided by another person. Using a human guide gives an individual with a visual impairment a sense of control. If they feel uncomfortable, all they need to do is let go of the guide. When the individual being guided lets go of the guide, the guide will usually stop, listen to feedback, and implement suggestions to improve the guided individual's experience.

Educating others on how they can help puts them at ease since it gives them a practical way to assist. Many family or friends want to help, but they don't want to embarrass the individual, and they are uncertain as to how to broach the topic of how to help.

Individuals who are visually impaired may find it helpful to have a strategy for dealing with people who approach and offer unwanted or incorrect assistance. One way to handle these situations is to speak up and explain the correct way to help. For example, when someone takes the individual's arm and starts pushing or pulling them, they might stop and plant their feet and ask to take their arm. If humor can be inserted, it may relax the situation. A comment such as, "If you hold my arm, that makes me the guide and that could get dangerous," might help communicate the point.

Summary

This lesson introduced techniques for getting around safely and confidently by using a human guide's assistance. These methods provide safe navigation strategies through doorways, up and down steps, and finding and sitting in a chair. Individuals who use a human guide can walk with

dignity and confidence. Practicing to determine when and how these strategies can be used will add another tool to your toolbox to cope with and adjust to living with a visual impairment.

Suggested Activities

Try the following activities to get comfortable with the techniques in this lesson:

- Teach human guide techniques to a close friend or family member.
- Practice using these techniques in your home where you are comfortable.
- Try the human guide techniques in a location outside your home without crowds or significant noise to gain confidence.
- Ask others who have a vision impairment to share their strategies for dealing with individuals who offer unwanted or incorrect assistance.

Lesson 7: Techniques for Maximizing Low Vision

Introduction

Low vision is a term used to describe a person who has some remaining vision that cannot be corrected by standard correction but is still useful. This vision impairment may limit the ability to do many daily activities. For example, a person with low vision may be able to read their morning newspaper but not the bus sign on the street corner. They may be able to see crumbs or a coffee stain on the kitchen counter but not dirt on the kitchen floor. They may not have difficulty walking around, even in an unfamiliar place, but be unable to recognize a neighbor's face when passing her on the sidewalk.

As of 2019, approximately 27% of the US population over age 65 experience low vision level due to age-related changes in the eyes. Cataracts form, the quality of tears diminishes, less light reaches the back of the eye, and many other changes occur. Aging eyes need four times more light than younger eyes to see well enough to read, prepare meals, and get around. It takes longer for older eyes to adjust to extreme lighting changes, such as moving from bright sunlight into a darkened room. As our eyes age, it becomes more challenging to see an object of the same or similar color as the background upon which it sits.

The goal of this lesson is to provide strategies for maximizing functional

vision and using it more efficiently. Keep in mind, functional vision does not necessarily correlate to the eye condition or the results of an acuity exam. Simply put, functional vision refers to how well a person uses their remaining vision as they perform daily tasks.

People often come up with techniques on their own for maximizing vision, such as using more light when reading or using natural light when doing crafts. It's important to experiment. Various options may help, and only you will know what will work best for you.

This lesson will focus on enhancing your remaining vision using low vision techniques and non-optical devices. Low vision non-optical devices include reading stands, supplemental lighting, glare control sunglasses, typoscopes, and tactile locator dots. Non-optical devices are frequently used in combination with the low vision optical devices covered in lesson 8.

Lesson Goals

- Explain the term low vision device.
- Give examples for using lighting, size, and contrast.
- Describe how to use tracking and scanning when traveling outside.
- Describe the difference between visual closure and visual clutter.
- Give four tips you can use to practice eccentric viewing.

Low Vision Techniques and Non-Optical Devices

The term low vision device appears throughout this lesson. A low vision device is anything that helps a person see better. A high-power magnifier, a small flashlight, or a black felt-tip pen used on white or light-colored paper all meet this definition of a low vision device. They can be electronic devices, apps on a smartphone, or a brightly colored label to help identify an object. There are numerous types of low vision devices. Think about what items you use every day, which help you to do tasks. Chances are that you are already using quite a few.

In addition to devices, there are numerous techniques people with low vision can utilize to maximize their vision and adapt to visual difficulties. Several of them will be discussed in this lesson. Some of these techniques are easy to implement and start using immediately, and others, such as eccentric viewing, take practice and are developed over time. Which methods will be helpful will depend on the type and severity of vision loss. Three basic techniques that can maximize vision for most visually impaired people include lighting, text size, and contrast.

Lighting

There are three basic types of lighting: ambient, task, and natural. Ambient light is found in all homes and businesses, providing general lighting for people to get around and perform their jobs and daily activities. This lighting type is usually located in the ceiling or a lamp on a table with a shade that often directs the light down toward the table or up toward the ceiling.

There are several considerations with ambient lighting. The type of bulb and brightness is just as important as the placement of the lighting. Many people with visual impairments have preferences regarding the color of light, and it is not uncommon for lighting preferences to change over time with fluctuations in vision. It is often recommended to use a lighting system that is variable to accommodate those fluctuations. This may mean having dimmers on all lights or using a smart lighting system, which allows for the color and brightness to be changed with a voice command or tap on the app.

Simple modifications such as a translucent lamp shade can improve lighting in a room by spreading the lamp's light. The location of lighting may make a significant difference. Many people with light sensitivity will do better with overhead lighting than mid-level lighting, such as table lamps. The most important thing to keep in mind with ambient lighting is that it should help a person navigate their environment more easily, not further impair their vision.

Many people with usable vision prefer using natural light when possible. For those who see best in natural light, this should be maximized by arranging furniture and window shades to allow the most light in the room. Most people prefer to read or work a crossword puzzle with window light over the shoulder of their better eye rather than to face the window. Some people can see better working at their desks near a window where filtered natural light can illuminate their work. The only downside to using natural light is the inability to control it. It will be vital to have an effective alternative in place, so the ability to do tasks is not limited to sunny afternoons.

Task lighting is designed for specific tasks or used for specific tasks due to the design. The light can be focused directly on the task. What will help depends on the amount and type of light and an individual's type and severity of vision loss. Forms of task lights include gooseneck lamps, desk lamps, reading lights, headlamps, flashlights, under cabinet lights, and snake lights. A snake light has a long, bendable neck that can wrap around

something like a pipe under a dark sink, leaving your hands free to work on a leaky pipe. A tube light attached under a kitchen cabinet shines directly on the counter or workspace, eliminating shadows from ceiling lights. It allows a person to use their limited vision in addition to their other senses to prepare meals. A similar light above the washer and dryer may make it easier to measure detergent and set the dials. A small flashlight can illuminate a door keyhole at night, making it easier to insert the key. In a darkened restaurant, the same flashlight may make it possible to read the menu, especially if it is in large print.

Light can be beneficial, but there are also times when light can be a problem, especially if a person's eyes are sensitive. A shiny surface and bright light can create glare anywhere. Ceiling light and natural light can create glare on shiny floors, which can hinder mobility. Adding heavy, sheer curtains to a window or door may reduce glare while letting in just enough light to help navigate. A tablecloth can be used on shiny surfaces such as the dining room table, kitchen table, or desk to fix the glare problem. If none of these suggestions to change the environment can be used, people can try wearing sunglasses or visors indoors.

Text Size

Increasing the size of the text for reading sounds like an easy accommodation to make. Some public libraries have large print books for loan. The National Library for the Blind and Print Disabled, also known as the Talking Book Library, may have fiction and non-fiction books in large print. Large print crossword puzzle books and books on hobbies like knitting and crocheting can be found online or at bookstores. Medications are essential items to identify easily, and large print is an option that can be requested from the pharmacy. People can make large print labels for important file folders, canned goods, seasonings, and other household items. Use a pen with a wider point to make the writing bolder. People who like playing cards, bingo, or other games can purchase them in large print. Some companies that carry these items include MaxiAids and LS&S Products. Computers and many smartphones come equipped with magnification programs that will enlarge the print.

The size of displayed or printed text can make a difference when reading. Making the letters larger or bolder, or changing the font if you are using a computer, can make text easier to read. See Lesson 19 for more information on the accessibility of smartphones and computers. Some fonts are easier to read than others. Computer fonts that are best for most people are basic block styles such as Times New Roman, Verdana, and

Arial.

Before purchasing an optical device for reading, try these non-optical low vision techniques and devices:

- Adjust the distance between your eyes and the material you are reading. If you are in the habit of holding your reading material approximately 14 inches from your eyes, try moving the material closer to your eyes to see if that helps.
- Use a tinted plastic line marker, which comes in various colors like yellow and pink. The color will dampen the white of the page, which may darken the print and make it stand out. These colored strips have various names, but if you Google "Eye Lighter Reading Strips," you will find various types, including Guided Reading Strips and the Learning Loft Eye Lighter.
- Place a dark ruler, preferably black or dark blue, under a line of print. The ruler will highlight the line of print and make it easier to follow. At the end of each line, move the ruler to the next line.
- Create a "reading window" (typoscope) out of a piece of dark-colored construction paper. Cut an opening the width of a line of print and the approximate length of a line in a book out of a half-sheet of construction paper. When you frame the line of print inside the "window," the print will appear larger because everything else is blocked out.

Contrast

People with visual impairments often need high contrast to see things clearly and may have difficulty distinguishing colors. This is important to keep in mind with reading or locating items, but it can also impact how easy it is to do basic daily activities. The level of vision loss and condition will impact the severity of the problem with color and contrast. For example, if someone drops an object of the same color as the floor, it will be hard to locate visually. If a magazine article has blue font on a grey background, it may be difficult or impossible to read. Things with prints or patterns of varying colors, such as bedspreads or countertops, may be challenging to use because items get camouflaged because of lack of contrast. The same problem may occur with monochromatic color schemes in furniture and paint.

However, there are simple fixes for most of these problems to increase contrast and maximize vision. There's no need to throw things out or

completely redecorate. Start by considering which items in the home are challenging to see due to low contrast. If there's a chair that is a similar color as the carpet, placing a pillow or throw blanket in a contrasting color can make it stand out and no longer be a hazard. If it's hard to see dropped items on a granite countertop, working over trays in contrasting colors can be used to complete tasks to prevent problems.

Using high contrast for everyday tasks will make things easier. Think about pouring coffee into a white mug rather than a dark color. Chances are it will be easier to see how full it is and prevent overflowing. People often will have different color cutting boards, so make sure to use a dark color when cutting light-colored foods like onions and a light-colored cutting board with darker foods like tomatoes.

Contrasting colors can also be used in layers. It is not uncommon for people to layer colors to increase visibility. A good example of this would be if you have light-colored foods like baked chicken and rice for dinner to pick a dark plate setting. Then set the plate on a light-colored placemat on the dark brown table. This makes the table, placemat, plate, and food all stand out with high contrast.

High contrast can also be used for safety around the home. Stairs are an excellent example of this concept. Marking the edges of the steps in a contrasting color, adding an extra handrail in a contrasting color, and eliminating shadows caused by ceiling lights will make the steps easier to see. Similar adjustments to the steps leading up to the front and back doors can also be made.

Eccentric Viewing

Some low vision specialists have described eccentric viewing as the most essential visual technique for someone with age-related macular degeneration (AMD). People who have AMD describe their vision as having a blurry or blind spot in the center that affects vision when looking straight ahead. While reading across a page, letters or possibly even words fade or disappear. With AMD, details are blurry, colors may blend, and faces may be unrecognizable.

Eccentric viewing can help with some of these problems. It uses peripheral vision to work around the blurry areas and focus on objects or words. With proper training, regular practice, and proper adjustments, the peripheral vision can take over what the central vision normally does. The training begins by covering one eye and focusing on a single object. Move the eye slightly above and below and to the object's left and right until finding the

place in your vision where the object can be seen most clearly. Next, try the same with the other eye. Note that the best position for each eye will likely not be the same. Usually, there is a better or dominant eye, which most individuals choose to use. Many low vision professionals, clinicians, therapists, and some OTs can help an individual determine the best viewing position and learn how to use it efficiently.

Training in eccentric viewing will not improve vision, and it does not provide the level of detail as is possible with central vision. However, functional vision can be maximized when eccentric viewing is combined with text enlargement for reading, enhanced contrast for performing a task, and appropriate magnification devices. The reading ability level that can be reached will be determined mainly by your vision and dedicating time to practice.

It's recommended to get professional training in eccentric viewing from a low vision therapist. The training can usually be completed in about six visits. Contact your eye care physician, a low vision specialist, or a rehabilitation center to find training.

Even when you are getting training from a low vision therapist, home practice is important for getting the most from the training and speeding up the progress.

Some tips for getting started include:

- Practice daily at home.
- Move your eyes, not your head, to find your best vision area.
- Start by looking at objects while sitting down and sitting still.
- Instead of moving your eyes across a page when reading, move the page across the best vision area.

Visual Closure

Visual closure is the ability to identify an object, picture, word, or even another person when only a part or parts can be seen. When a person's vision isn't clear enough to see details or their peripheral or side vision is limited, clues such as color, size, shape, and location can provide enough information to make an informed guess or trustworthy identification. For example, when looking for a can of tomato soup in the pantry, visual closure can be used. You pick up a can in the pantry. It's the right size for a can of soup. The top of the label is red, and the bottom is white. The letters on the bottom are bold and black and stand out against the white background. You locate the beginning of the word and figure out it begins

with a T. You know you did not buy any other kind of soup that starts with the letter T, so you know you have the can of tomato soup.

Another situation where visual closure may help identify items in the mail by the logos on the envelopes. Think of other examples where visual closure is used regularly. People often identify items by a general shape or color without looking to verify what it is by the label or details.

This technique can also be used to identify people. For example, let's say you are waiting for your son. You see someone walking toward you. The person is tall, has no hair, is wearing a dark shirt and lighter pants, and swings his arms. Even though the image is blurred, you are quite certain it's your son because he is tall, bald, always swings his arms when he walks, and he told you he was wearing a dark shirt.

Visual Clutter

Visual clutter is the inability to see or identify a specific item amid a bunch of items. An example is having trouble locating a watch amidst other jewelry pieces or finding a wallet when other things are scattered on the top of the dresser. Another way of defining this visual difficulty is the inability to see a specific item against a busy background, such as keys against the floral bedspread or peas on a patterned dinner plate. Decluttering the environment and using high contrast colors can assist with visual clutter. Also, putting essential items like keys, watches, phones, and other essentials in the same place every time can prevent the frustration of needing to search for them.

Tracking

Tracking is used in lots of situations for both near and distance activities. One definition of tracking is the ability to visually follow a moving object by moving your eyes or turning your head while moving or standing still. One near-vision example is visually following a pen as you write a note or sign your name on a credit card slip. A distance-vision example is visually following traffic as it moves through an intersection. A second definition is the ability to visually follow a stationary line, such as when reading line by line in a book or following the grass edge of a sidewalk to find an intersecting sidewalk. Tracking can be a useful technique to use, especially for people with peripheral vision loss. This may take practice to do well with limited vision but is beneficial to learn.

Scanning

Scanning is the ability to locate a specific object by moving the eyes and head in an organized pattern until the object is found. It is important to use

an organized pattern with this technique for it to be effective. It's easy to miss seeing an object by just an inch or two if you first look to your right and then look to your left and all around. It is better to look for the object by scanning the area from one side to another until your eyes have covered the entire area. For example, if you are looking for your phone on your desk, you might miss it if you don't search the desk's entire surface with your eyes.

This approach to scanning should be used for both near and distance tasks. Near tasks could include finding the buttons on the coffee maker or dials on the washing machine. Use the same technique when looking for a name on a list or a subheading in a book.

When scanning for something in the distance, it may be preferable to use an optical device called a monocular. This is a small telescope that is described in the next lesson. If you are looking for a bus sign at the end of a block, whether you use only your vision or use a small telescope, you will still use tracking, scanning, and visual closure skills. You might scan the distance looking for a pole, then visually track along the curb or grass edge until you get close to the pole. You then have the option to track up the pole with your eyes or the telescope and scan the sign.

Light-Dark Adaptation

It is common with a vision loss to have difficulty adjusting to extreme changes in light level. Someone with normal vision will adjust more quickly when entering a dimly lit movie theater than someone with a visual impairment. This condition is common for people with diabetic retinopathy, glaucoma, and Retinitis Pigmentosa. Many older people with visual impairments require more light than they did previously to perform many everyday activities. There are techniques and devices which may help with this problem. If you experience difficulty with adapting to changes in light regularly, try the following suggestions. When outside in daylight, always wear the darkest sunglasses you safely can. The dark lenses will force your pupils to remain open in ordinary daylight, reducing the amount of time your eyes will need to adjust when you enter a building. When you are by yourself and not using a guide, plan time for your eyes to adjust. For example, when possible, sit down on a chair or bench and wait until your eyes have adapted to the lighting.

Another condition with similar characteristics to light-dark adaptation is called night blindness. An individual with night blindness has difficulty seeing at night and in dimly lit environments. This can be to varying

degrees. Some people with night blindness can still see some items, and for others, it is entirely dark. Depending on the environment and the level of night blindness, different adaptations can be used. For inside the home, lights can be placed at various locations along pathways that can be illuminated as a person walks past. Keeping flashlights close by can also be helpful. For individuals with severe night blindness, the human guide technique, a cane, or other mobility aid will need to be used outside the home for safety and independence.

Summary

This lesson provided an overview of low vision devices and techniques. It is important to experiment with these suggestions to determine what works best. Everyone is different, and how they see it will fluctuate drastically. Start with some of the basic techniques and adaptive devices that you already have around the house to see what a difference they make in your daily life.

Suggested Activities

Try some of the following activities to help understand and use low vision devices and techniques.

- Identify areas of the home that are difficult to navigate and use lighting and high contrast concepts to improve them.
- Experiment with different sizes and styles of a font to see if you can read any comfortably.
- Practice the scanning technique to locate an item to help you find an organized pattern that is effective for you.

Resources

To find large and bold print items such as games, calendars, and check registers, check the following companies:

- MaxiAids
- LS&S Products
- Independent Living Aids

Lesson 8: Make the Most of Your Vision with Magnification Devices

Introduction

In Lesson 7, we learned about some strategies and devices that can help maximize low vision. This lesson builds on those strategies by introducing you to magnification devices. With the help of these low vision aids, individuals may be able to read the list of ingredients on a food package; independently access bills and other mail; work a crossword puzzle; or read restaurant menus, both booklet and behind the counter. This lesson will describe various near, distant, and electronic optical magnification devices that can make these tasks possible for many people with functional vision.

Lesson Goals

- Compare different types and styles of near magnification, distance magnification, and electronic magnification devices
- Consider the advantages and disadvantages of each type of device
- Gain a realistic idea of how magnification devices can help

Near Vision Optical Devices

Near vision optical devices are used for close tasks like reading, writing, sewing, or putting a hook on a fishing line. The most common near vision optical devices have a lens and include stand magnifiers, handheld magnifiers, magnifying reading glasses, clip-on magnifiers, and telemicroscopic glasses. Below are descriptions of each of these devices, with a brief discussion of their advantages and disadvantages.

Handheld Magnifiers

Handheld magnifiers are portable and helpful for spot-reading things like labels on items, tags in stores, insurance cards, credit cards, restaurant menus, and other brief identification tasks. Handheld magnifiers are easy to use, come in different sizes and shapes, are available in various magnification strengths, and commonly have built-in lights. Some can fit in a pocket, purse, or small backpack and fairly inexpensive. One disadvantage is that handheld magnifiers must be held at both the right distance from the item being viewed and the right distance from the eye to work effectively. Because of this disadvantage, handheld magnifiers are not suited to lengthy reading tasks. Finding and keeping the right focal distance for long periods can be frustrating, and holding a magnifier can quickly tire

one's arm. Also, any slight movement of the user's arm or hand will cause movement, making it difficult to keep one's place on the page because the field in view is small.

Stand Magnifiers

Stand magnifiers are a better option than handheld magnifiers for long-term reading. Stand magnifiers are similar to handheld versions, but they have a stand or extension on the bottom that allows the magnifier to rest directly on the page or other item being viewed. The stand holds the magnifier at the correct distance from the object being viewed to keep the focus, eliminating the need to hold the magnifier steady to maintain a clear image manually. When placed on a text page, stand magnifiers are automatically positioned for its focal distance. Most come with built-in lights that illuminate the area being viewed. Some individuals might use them for extensive reading, but this is not common because the field of view is not large. When using a stand magnifier, it's a good idea to use a reading stand to prop up the material at an ergonomic angle to see the text more easily and avoid bending over the magnifier, causing neck strain. Another advantage of a stand magnifier is that fatigue of one's arm or hand is usually not as significant as a handheld magnifier. This type of magnifier is fairly inexpensive compared to others. A disadvantage of stand magnifiers is the small viewing window, which often slows reading speed. Stand magnifiers are also a bit less portable than handheld magnifiers due to the stand's larger size.

Lamp-Magnifier Combinations

Lamps with magnifiers attached come in various styles and magnification powers and are found in catalogs of products for visually impaired people. They can also often be found in craft stores. These lamp-magnifiers can be used at a distance of 10 to 14 inches, making them great for hand or machine sewing, knitting, or crocheting, threading a fishing pole and attaching hooks, and other tasks that require both hands. In general, they do not provide as much magnification power as several of the other devices described in this lesson. These magnifiers can be attached to a pole to stand on the floor, while others are designed to stand on a desk or tabletop. Another style of this type of magnifier is attached to a lanyard or cord to be worn around the user's neck.

Magnifying Reading Glasses

Magnifying reading glasses provide a wide field of view, allowing you to read a line of text more easily. Because they are portable and leave your

hands free, you can use them almost anywhere. You can do handwork with lower-powered glasses, read a computer screen, or read sheet music at the piano quite easily. With higher-power lenses, reading materials must be held closer to your eyes and kept very steady, which can become tiring. It is important to use the right amount of lighting when using magnifying reading glasses to help print look clearer.

Loupes

Magnifiers called loupes clip on to your regular prescription glasses, increasing the magnification to assist in reading print or music or to do handwork. Loupes are convenient. Flip them up when you don't need them, then bring them down in front of your glasses when you do. The field of view through the loupe can be somewhat small, which may be a disadvantage when reading for any length of time. Again, it is important to add enough lighting when using a loupe.

Telemicroscope Glasses

Telemicroscope glasses are designed for near vision tasks and can be used hands-free at a comfortable working distance. They provide a clear image for reading text or music, using a computer, doing crafts, playing cards or board games. Unfortunately, there are several disadvantages. These devices are small telescopes that feel heavy on your nose and do not look like glasses, which some find aesthetically unappealing. The field of view is very narrow and may cause images to appear dark. They are also quite expensive. Also, as with any magnification added to glasses, arm, and hand fatigue when holding an item you are looking at will cause the magnified image to wiggle if your hands or arms shake.

Distance Vision Optical Devices

Distance vision devices are often used for identifying print, symbols, or objects at a distance or for short-term viewing, such as reading a street sign, the number on the front of a bus or train, an aisle number in the grocery store, or bird watching. Other distance vision devices help watch television, look for someone in a crowd, attend sports or theater activities, or view scenery. Like near vision optical devices, distance vision optical devices can be handheld, clipped on, or put in a frame to leave the hands free.

Monocular

A monocular is a small, handheld telescope that can help with short-range and distance tasks. Use the monocular by holding it steady in front of one

of your eyes, usually, the eye with which you see best. A monocular is typically used for short periods to read things like signs, house numbers, or menu boards. Monoculars are available in a wide range of magnification powers and are small enough to carry in a pocket or hang on a cord around your neck.

Practice is needed to use a monocular for scanning the environment to locate your target. Slight hand movements or tremors can affect an image's focus and clarity, and your depth perception and balance can be distorted when looking through a monocular. These devices should be used while standing still; it is not recommended to walk while using a monocular. Bright lights can cause glare, which can also make it difficult to use a monocular.

Spectacle-Mounted Telescopes

Spectacle-mounted telescopes are permanently attached to a pair of eyeglasses, leaving both hands free. They provide a clear view for watching sports or viewing television or movies for extended periods without arm fatigue. Like telemicroscope glasses, they have a small viewing field and do not look like normal glasses. Like monoculars, these glasses are not safe to use when walking.

Bioptic Telescopes

Bioptic telescopes are a type of distance optical device mounted in the upper part of eyeglass lenses. The wearer looks through the bottom half of the glasses at objects in the distance and looks through the telescope in the top of the glasses to see a magnified image. Many states allow some people with low vision to drive using bioptic telescopes. Note that specific bioptic driving rules and requirements vary from state to state.

Electronic Magnification Devices

One of the disadvantages of the near vision optical devices mentioned earlier is a small viewing area. Most people want a device that is powerful enough to read print while also showing the entire page. Unfortunately, as magnification increases, the viewing area gets smaller, so basic magnifiers can't provide both a large viewing area and a wide range of magnification. Additionally, electronic magnification can help increase contrast. For instance, if black print is on a red background, this image can be manipulated to show the image as white text on a black background or black text on a white background.

Electronic magnifiers can provide a wide range of magnification levels with

an increased viewing area. Different types of electronic magnifiers have different capabilities. All electronic magnifiers use a combination of camera and screen to increase functional vision.

The desktop version displays a magnified image on a monitor the size of a computer screen, allowing some people to read books and magazines, view photographs, read handwritten letters, and fill out forms and other handwriting tasks. Other electronic magnifiers are handheld and easily carried in a purse or bag to help with tasks outside the home. These portable systems can allow people to read restaurant menus, labels, coupons at the grocery store, the program at a concert, or forms at the doctor's office. Both desktop and portable electronic magnification systems can help in the workplace or at a weekly volunteer activity. Most electronic magnifiers offer adjustable levels of magnification, color, and contrast. Some models even allow for low magnification levels to help those with a limited field of vision or for those who need increased contrast but not magnification. The less magnification used, the more text can be fit on the screen. Each device has advantages and disadvantages, depending on the user's vision and lifestyle.

CCTV

The desktop version of an electronic video magnifier called a closed-circuit television (CCTV) has a camera pointing at a table where a document can be laid. The camera captures the image and displays the enlarged image on a monitor. Not only can a CCTV enlarge anything placed under the camera, but it can also improve the contrast and brighten the monitor's image. It can be changed to black letters on a white or light-colored background or white or light-colored letters on a dark background. Some CCTVs have a variety of color options to increase contrast and reduce eye fatigue. Most electronic magnifiers focus automatically and can even capture an image to be stored. Some devices include a feature called optical character recognition, which can recognize and read the text aloud. A CCTV can make it possible for someone to read a prescription label, read a book or magazine article, sort the mail, pay bills, fill out forms, write a letter, identify items, or pursue crafts and hobbies.

Some individuals may find handwriting tasks are much easier to accomplish when using a CCTV, although practice may be needed to master this skill. Unfortunately, desktop CCTV units are too big to be carried, limiting how and where they can be used. Another disadvantage is that they cost much more than any of the optical devices discussed so far.

Portable Video Magnifiers

A portable video magnifier looks a little like a smartphone with a screen on top and a camera on the opposite side. Some apps can transform a regular smartphone into one of these devices. (Note that portable video magnifiers are made for the specific purpose of enlarging text and may have better quality than the app equivalent.) Screen sizes can range from about 3.5 to 12 inches. Like the desktop versions, the level of magnification and color contrast is adjustable, and some portable video magnifiers can take a picture and show the image after the device is moved away from the viewed image. These devices can be used anywhere for almost any task. They provide a range of magnification powers and excellent contrast and brightness. Their advantages over lens magnifiers include manipulating the contrast, a wider field of view, and the ability to read with both eyes. Compared to a desktop video magnifier, these devices are more portable, less conspicuous, and can be used to see items, not at eye level. For instance, to see a lower level shelf at the grocery store, the device can be lowered, and a picture taken. The device can then be brought back to eye level for viewing. The disadvantages include expense, difficulty completing handwriting tasks, and, on some models, the image can have faded edges. The small screen size limits the field of view, but many portable video magnifiers can be connected to a TV or large monitor at home when used for a longer-term reading task to expand the visual field.

There are even some electronic video magnifiers that can be worn over the eyes. These options are still gaining momentum in the market and may change more frequently as new technology emerges. Currently, several examples of these devices include eSight Eyewear, IrisVision, and NuEyes. Although these devices are wearable, it is usually not recommended that you move around while wearing them as they can change your sense of space and be a fall hazard. These options are highly marketed; however, many of the same tasks can be completed with lower-cost devices.

Before you purchase any of these electronic magnification systems, it's recommended that you have a low vision exam and discuss your needs and options with a specialist. If possible, find a government or nonprofit blindness or vision rehabilitation agency where you can get hands-on experience with different video magnification devices. It may help bring examples of the types of items you wish to view with a video magnifier. Make sure to ask about specific features; not all devices have all the features described in this lesson. There is a wide variety of models and brands of video magnifiers. If the specific setup you desire is not available

in one product line, keep shopping. Another vendor may offer a combination of features that works better. Finally, programs that provide video magnifiers as part of their service may only offer a limited number of options.

Operating video magnification devices is not difficult, but it does take a little time to learn. Getting familiar with several models lets you make an informed choice. Some low vision clinics, private and government agencies, and online resources have loaner programs or resale options for refurbished electronic magnification devices at reduced prices.

Summary

Different tasks may require different devices because each situation has different requirements. Most low vision aids are specifically made for either a near or distance task. For example, near vision devices are designed for reading books, mail, or recipes. Each of these near reading tasks varies by length, print size, and possibly print or background color. Although all near reading tasks might be accomplished with the same magnifier, the user may find that the size of a device is not practical for taking to the kitchen to read recipes or that a smaller device is tiresome to hold for the longer activity of reading a book. Distance devices might be used for watching television or attending theater productions or sporting events. Another form of magnification is electronic video magnifiers, which use a camera to project text or an image on a screen. The large desktop models allow you to read a book, see pictures, write a check, or address an envelope under the camera. Smaller versions make it easy to read a menu, a concert program, or the hymnal at your place of worship. Because they are task-specific, you may need to use several optical devices throughout your day based on your vision and lifestyle. Professional training, which is often available through government or nonprofit blindness agencies, is recommended to use many of these devices efficiently.

This lesson has described several low vision optical devices that can be used to enhance the remaining vision. It is important to note that not everyone can successfully use magnification to access print due to the amount of remaining vision or secondary physical challenges that can interfere with some low vision devices' successful use. Because there are various options, it is important to evaluate and experiment extensively with the devices to determine what will work well for the tasks you need to accomplish. It helps maximize vision with optical devices, but some tasks can be done more quickly by using other senses and the other tools in the

toolbox.

Suggested Activities

Try these activities to further your understanding of magnification devices:

- Contact your nearest government or nonprofit vision rehabilitation agency and request assessment and training in the use of optical devices.
- Identify five near vision tasks that you would like to use an optical device to accomplish.
- Identify five distance vision tasks that you would like to use an optical device to accomplish.
- Think of 3 ways you could incorporate the skills you used in previous lessons along with an optical device to maximize effectiveness.

Resources

Find various low vision aids such as magnifiers, monoculars, and electronic magnifiers at the following links. Please note that the below list is not comprehensive.

- Enhanced Vision
- eSight Eyewear
- Humanware
- Independent Living Aids
- IrisVision
- LS&S Products
- MaxiAids
- NuEyes
- Vispero

Lesson 9: Organization and Labeling

Introduction

Losing your keys, cell phone, TV remote, umbrella, or screwdriver you had in your hand just moments ago is frustrating to anyone, but for a person who is blind or has low vision, losing items can consume a lot of time and be a safety hazard. This is why organization is so important. It reduces frustration, increases the efficiency of locating items, and leads to greater

ease in completing tasks. Individuals who use organization and strategically label items often feel more independent and confident in their home.

This lesson will cover effective organizational strategies for people who are blind or have low vision. It starts with a concept discussed in previous lessons: Everything has a place and everything in its place. Individuals who make a habit of putting their watch in a jewelry box will likely find it in a matter of moments. Likewise, keeping your umbrella or mobility cane beside the door makes these items easy to locate. The specific location chosen for a given item isn't as important as being consistent. Storing items in the same locations in a home or office will greatly reduce frustration.

Lesson Goals

- Learn strategies for organizing areas of the home
- Learn how to choose whether to label items
- Learn methods and devices for labeling items

Organizational Strategies

Some general organizational strategies and tips can be applied to most areas of the home and office. Several of these may be familiar, and others will be new concepts that incorporate low vision or nonvisual strategies.

Start by decluttering the area to be organized. Sort through items, decide what to get rid of, what to store, and what might belong elsewhere.

Consider storing items that aren't used often in another place. For example, sort clothing by season. Mixing cold- and warm-weather clothing makes it harder to find a specific item because there are more possibilities to sort through.

Many individuals use containers as an important part of the organizational process. Confining items to containers can be helpful for anyone and is especially beneficial to people with limited vision. Start with locating containers that are already in your home, such as baskets, plastic bins, boxes, drawer dividers, Tupperware, hooks, rubber bands, or Ziplock bags. These items make it easier to find items because they are separated and confined to a small area. For example, if it is difficult to tell the colors of socks apart, having them loose in a dresser drawer makes the task more challenging. If there's a basket on the entry table where keys, wallet, sunglasses, and other everyday items are placed, you never have to search the whole table trying to locate things. More examples of ways to

apply these concepts will be provided for each section. Concepts like increasing contrast, introduced in a previous lesson, may also help create organizational strategies.

Clothing

This section will focus on identifying and organizing clothing and other items typically found in a bedroom closet and dresser drawers. Tips for organizing accessories and other items in a wardrobe are suggested as well.

Before organizing clothes, shoes, and accessories, take an inventory. Remove items that haven't been worn or used recently. Reducing the number of options helps simplify and makes finding favorite items easier. If you have difficulty distinguishing certain colors, such as black and navy blue, it may make sense to eliminate one of those colors from your wardrobe to simplify things. Some people may go as far as limiting their color choices so that any shirt will go with any pair of pants. Don't worry, though: If that's not appealing, the following are some suggestions for identifying and matching items in complex wardrobes.

You may wish to arrange your clothing by type, hanging all the shirts together, pants together, and so forth. You could also organize by category, hanging casual clothes at one end of the closet and business and formal apparel at the other end. Although these are common organizational approaches, they may not work as well for individuals who are blind or visually impaired.

If you want to minimize the time you spend coordinating clothes, it may help hang or stack entire outfits together. Some hangers are designed for this purpose and can hold a top, a bottom, and sometimes have a hook for accessories. Socks, ties, or belts can be hung directly on the hanger or in plastic or mesh bags. A separate hanger for each item can also be used. Hangers can be grouped using plastic or cardboard dividers placed on the bar between outfits. This method makes it easier to match, especially for individuals with specific items they like to wear together. You can modify this method by hanging several matching garments together, like two pairs of pants that go with any of three different shirts and a sweater. These systems need to be maintained by putting the items back together after they are worn or laundered.

Another approach is to group clothing by color by putting all of the black tops and bottoms in one section, all the blues in another, and so forth. This method works well for individuals who can tactilely identify different clothing

pieces but struggle with distinguishing the colors. Many people can use their sense of touch to identify distinctive aspects of clothing. This method is extremely helpful and will minimize the number of items that need to be labeled.

Practice identifying items by touch while organizing. Tactilely or visually search each garment to get a sense of its characteristics. Is there a collar? What is it like? Are the buttons unique in shape, texture, or size? Are there pockets? There may be three pairs of wool slacks, but the brown ones do not have a pocket, the black ones do not have belt loops, and the blue ones fasten with a hook. Brown, navy, and black are usually the hardest colors to distinguish with limited vision and can even pose difficulties for color-identification devices. Looking for distinctive characteristics eliminates that problem. These techniques can also help in identifying shoes, jackets, gloves, and even socks. Make sure to separate items that are difficult to identify or differentiate so they can be marked with one of the methods suggested below.

Similar systems can be used for organizing items in dresser drawers or on shelves. Drawer dividers are extremely helpful. You can use shoe boxes or other appropriately sized containers to keep small items like socks and underwear separated. There's no right way to organize things, so experiment to find what makes sense to you. Separate and group items together in ways that will make it easier to locate specific items.

Keeping shoes organized can be an ongoing challenge. It's easy to kick off work shoes next to the front door or haphazardly throw running shoes at the bottom of the closet. However, habits like these cause problems for individuals who are blind or have low vision. There are numerous ways to organize shoes and many types of shoe-organizing storage options. Once shoes have been sorted, consider the best place to store them. Perhaps a shoe rack on the closet floor or an over-the-door option will work best with the available space. If there is extra shelf space, keeping shoes in their original boxes, stacked by color or labeled on one end in large print, braille, or large tactile letters may be an option. We will discuss more labeling options later, but this is an example of items that may need to be labeled.

A helpful tip for people who have two or more pairs of running shoes is to tie the shoelaces together when they are taken off. That way, even if the shoes get put back in the wrong place or are thrown in the bottom of the closet, they can be easily located.

Accessories like ties, cuff links, hats, bags, jewelry, belt buckles, hair clips,

scarves, and gloves also need to be organized. Bags, baskets, or storage containers with small compartments can work well. Individuals with lots of jewelry may already have a large, multi-drawer jewelry box, although an organizational system like this may not be effective for differentiating different colors or items. Use the same methods mentioned previously to group items by what goes together or by color. You probably will not want to mark or label every piece, so bags or containers with small compartments labeled are useful. Types of containers that will work include a large sewing box, a multi-drawer toolbox, a pill or craft organizer, or a fishing tackle box.

One thing to keep in mind about choosing an organizational system is that no matter which system you choose, it needs to be maintained. The simplest way to do this is to immediately put items back where they belong after they are used. For example, when getting undressed at the end of the day, put accessories and shoes in their places and put clothing in the appropriate place to be laundered. Many blind or low-vision individuals use separate laundry baskets or hampers to separate whites from colors. It can also help use mesh laundry bags for socks, underwear, and other separates that you want to keep together as they are laundered. These bags can be purchased in various sizes, the largest of which may hold an entire outfit. If an outfit is laundered in a bag, it can be folded or hung together on a hanger once dry. Socks of the same color can also go in a laundry bag before laundering.

Bathroom

It is crucial to identify and organize items in the bathroom, including cleaning products, personal care items, and medications. Once the items you use regularly are separated, you can choose organizational strategies. Start with things that may be difficult to identify or locate. Items like shampoo, conditioner, and body wash can be organized in a caddy hung on the shower door or over the shower head. It can help purchase products in differently shaped containers for easy identification and then line them up according to use. However, if two or more products are in similar containers, a rubber band placed around one container can differentiate between similar containers.

Decorative trays, baskets, or containers can be used to organize cosmetics and toiletries on the countertop. It can be helpful to group items by what they are or what gets used together. For example, all dental care items, like toothpaste, brushes, dental floss, and mouthwash, can be kept in a

container together to make them easier to locate. If you keep a supply of extra toothpaste, bath soap, aspirin, or other personal care items, keep them separated with drawer dividers or divided storage bins under a cabinet.

The key is to keep the items you use daily in easily accessible places and use strategies to make it easy for you to identify each item. Other suggestions for labeling will be provided later in this lesson.

Linen Closet

Despite good intentions, linen closets often get disorganized or cluttered. Clothing, sheets, and towels can be separated in ways that make identification easier. Some people use different shelves for bath towels, hand towels, and washcloths, and then organize by color. Sets of towels can be folded together and stacked for a simple system. If you use only white towels, then you just have to stack each type of towel in its pile. It's helpful to have sheets and pillowcases folded together in sets. Quilts and comforters can be folded with their matching pillow shams. If it is difficult to identify colors or patterns, it can help to mark them in different ways to help with identification. For example, you could cut the labels out of one set, attach safety pins to the tags on another set, and not mark the third set.

Kitchen

Organizing or reorganizing the kitchen may seem like a huge project, but it can be fun, especially if a friend agrees to help. Consider what will be involved before getting started. Some heavy items may need to be moved, or you may need to reach extremely high cabinets. Consider asking a friend or family member to help or try hiring someone to help. With so many small and large items to reorganize, it saves time when two people share the work.

Take inventory and declutter before you start to organize. Items that you no longer use can be donated or sold. Also, it may be helpful to take an inventory of the available space. Are there lots of cabinets and drawer space? Is there a utility or laundry room where laundry, cleaning, and paper products can be stored? Consider the space and make a plan for where and how items can be organized.

Items you don't use often might be put out of the way or on top shelves. Dishes or small appliances you use daily could go on bottom shelves to make them easier to access. It is helpful to put items near where they will be used. For example, coffee cups can be stored above your coffee maker.

Glasses can go near your sink, refrigerator, or water filtration system. Spices can be organized in a spice rack, built-in lazy Susan, or a small cabinet near the stove and the counter where you most often prepare food preparation. Cooking utensils like knives, spatulas, measuring cups, spoons, and whisks can be kept near the stove or food-preparation area. Store eating utensils in a drawer below where dishes are kept. The pattern here is to create a simple workflow, minimize the steps for each type of task, and keep like items together.

The kitchen is another area where it helps use containers, dividers, and storage boxes with compartments. There are storage containers specifically made for organizational purposes, like silverware dividers, knife blocks, wall hooks, and magnets for utensils. You can also make your organization system with containers found around the house. Attach large print or braille labels to spices for easy identification. Large, bold print or braille can be used on magnetic tape for cans. As in other rooms, it is important to put items in a specific place and make sure they get put back in that place every time they are used.

Cleaning Products

A common recommendation is to use other senses, like smell or touch, for identification. However, this can be dangerous when it comes to cleaning products. To make identifying cleaning products more safe, consider buying products in containers with distinct shapes. You can also try marking or labeling your cleaning products. It can be helpful to keep different products in the areas in which they are used. For example, keep shower cleaner in the bathrooms and oven cleaner in the kitchen. It can also be helpful to use a caddy for products you use together to keep them organized. If there are small children in your home or if you use particularly harsh chemicals that might get mixed up, keep cleaning supplies in a locked cabinet. Cleaning products can be harmful if mixed or used incorrectly, so it's best to have multiple identification methods in addition to an organization system. Some people may find using a magnifier or an electronic device to read aloud labels and cleaning information helpful.

Labeling and Identification

Once your rooms and items are organized, you may want to mark or label some items to help with identification. This strategy is mainly useful for items that may be mixed up or are not distinguishable using other senses, like smell, sound, or touch.

There are different methods for marking and labeling. Labels can be

handmade or purchased. Some basic labeling ideas, like using rubber bands to mark similarly-shaped items, were mentioned previously. The methods that work best for you will depend on your functional vision, number of items that need to be labeled, the types of items to be labeled, and your comfort level with technology.

Tips for Making Labels:

- Rubber bands, twist ties, safety pins, and tactile letters can be used to label items tactilely.
- Letters can be made with a bold felt tip pen, drawn with puff paint, or cut from a tactile material.
- Bump dots are commonly used for marking appliances, but they can also mark items around the house.
- Use index cards for identification by printing or gluing tactile letters or braille to a card.
- Try adhesive labels and a bold pen to write large, readable letters.
- Create labels using items like adhesive options available in craft sections of stores, making labeling more fun and attractive.
- Reuse containers or create removable labels, so you don't have to create new labels for consumable products constantly.
- Keep your labeling system as simple as possible. If it's too complex, then it might be abandoned.
- Attach labels for canned goods with a rubber band. When a can is used, keep the label to take when shopping, then reattach it to the new can before leaving the store.
- Set aside a catch-all drawer or container where labeling supplies can be kept, including scissors, rubber bands, twist ties, several kinds of tape, glue, bump dots, post-it notes, bold pens, and index cards.
- Find ideas for labeling in specialty catalogs or search stores for items that can be used.
- If your home is shared with sighted people, use clear labels that don't cover the print.

Audio Labels

Sometimes it's faster to use physical features, like shape or color, or handmade labels to identify items. At other times, a high-tech device might be a better option. A labeling system should save time and reduce frustration, not add to it. So, before purchasing any piece of technology,

you may want to test some devices and applications before deciding which to buy.

One helpful device is a pocket-size PENfriend. It's an easy-to-use audio labeling system for recording and rerecording labels to put on medication bottles or anywhere else a label is needed that contains a longer explanation. Touch the adhesive label with the PENfriend, hold down the record button, and create a message as long or as short as necessary. To play the message, hold the PENfriend over the label to hear the recorded message. The PENfriend comes with sticker labels. Additional adhesive labels and laundry tags can also be purchased.

Another electronic labeling system for people who are blind or have low vision is WayAround. WayAround has a free smartphone app that pairs with WayTags, which can be purchased to label various items, like clothing, food, cleaning products, or documents. The type of tag you purchase should be based on what you want to label. There are clips, stickers, and magnet tags that are easy to apply and buttons sewn on to clothing.

Some apps can be used on smartphones or tablets for identification. Seeing AI, Envision AI, and the K-NFB reader are the most commonly used. These apps can all read text aloud to help someone who is blind or has low vision to identify items or information. Some of these apps can also scan bar codes; read handwriting; or identify people, denominations of money, and colors.

Labeling Medication

Medication and vitamins tend to come in large and small sizes of the same type of bottle. Some vitamins can be identified by shape, but labeling is probably more convenient if you take several. Vitamins can be organized on a tray, in a basket, or on a shelf in your medicine cabinet.

Many over-the-counter medications also come in similar containers. Pill organizers are helpful for identification and verifying whether or not each dose was taken. Organizers come in a variety of sizes and styles and often have large print or braille options. There are several methods for labeling bottles of prescriptions and over-the-counter medications. Rubber bands can be used to distinguish between similar bottles. People with functional vision may want to use a marker to write the first letter of a medication on top of the cap or create an attachable large print label for easy identification. Many pharmacies will provide different colored caps for prescription bottles and large print labels and fact sheets upon request. Some pharmacies will offer to organize all your medications into doses so

that the pills you take in the morning are in a blister pack together, while your evening pills are in another pack.

The PENfriend (described above) and other talking devices created for medication prescriptions (described in Lesson 8) can also be useful for medication management and identification. Script Talk is a system for medication identification that utilizes a small device for reading labels. Each prescription bottle has a label that is read aloud when placed on the device. Additionally, a free smartphone app can be used to read Script Talk labels. This system is widely used by pharmacies, including some mail-order options. Ask your pharmacist to provide prescriptions with Script Talk labels at no additional cost. If Script Talk labels are not available at your pharmacy, contact En-Vision America to get your pharmacy onboard.

Labeling in the Office

Many people have a home office or a desk where they keep important household paperwork, like copies of insurance policies, tax information, and medical files, and where they pay bills and handle other financial matters. Organization in this area is essential. Although many businesses use paperless systems, there may still be some documents that are beneficial to maintain in hard-copy. Despite the move toward paperless systems, some individuals may be uncomfortable with paperless systems and prefer to maintain all hard-copy files. For this reason, we will look at organizational strategies for both types of systems.

Before jumping in, consider the pros and cons of each option. Electronic methods for accessing and storing information can be used with assistive technology. For example, given your comfort level with technology, is it simpler to access bank statements online or to have a system for filing, labeling, and identifying paper statements?

For people who prefer paper documents, systems for organizing, and labeling are essential. You may want help from someone who is sighted as you first set up a labeling system. Different desk and filing cabinet drawers can be used for categories of items. For example, you could designate a drawer for banking items where you keep checkbooks, new and old checks, and check registers. Instead of putting everything in file folders, it might help to keep some items, like bank statements, in three-ring binders, with the latest on top. You could store the binders on a shelf at the desk or somewhere nearby.

For people with functional vision, keeping each set of files separate in color-coded file folders in a desk drawer or file cabinet can make it easier to

find the papers they need. Organizing folders in alphabetical order and using bold lettering on the tabs makes them more visually accessible. Consider using large print labels or brightly colored sticky notes to differentiate between sections or categories of paperwork. For individuals without usable vision, consider keeping important files organized by category and stored in file folders in alphabetical order. Label each folder with a raised print letter or braille. You can use WayAround or PENfriend labels.

If you prefer a paperless system, consider how and where documents are received. If documents are available through a website, check how far back records can be accessed and, if necessary, learn how to download or save files in a PDF or other format that can be saved to your computer. Designate a specific place on a computer, Dropbox, or other digital storage location for keeping these items. Make folders for each business relationship, and store relevant items there, ensuring the files' names give adequate information. For example, a bank statement might give the date of the month and year for that statement. If statements or bills come through email, save emails to a designated folder in case you need to find a specific item.

Summary

There are many different ways to organize and label items in your home; hopefully, this lesson's suggestions will help you start. Once you develop a system, you may notice how easy it is to locate items independently. Individuals with a successful organization and labeling system have good habits that help them keep their systems running smoothly. It helps to declutter and reorganize once or twice a year to keep your system working well and eliminate items no longer needed.

Suggested Activities

Take these steps to get started applying what you have learned in this lesson:

- Identify areas of your home where you want to organize and label.
- Determine a strategy and decide if you need help to set up a new system.
- Decide which organizational, identification, and labeling methods will work best and make sure you have the necessary materials.

Resources

- En-Vision America_– ID Mate and ScriptTalk
- Hadley – more information about labeling and organization
- Independent Living Aids – PENfriend, WayTags, other labeling products
- LS&S Products – PENfriend, WayTags, other labeling products
- MaxiAids – PENfriend, WayTags, other labeling products
- PENfriend – audio labeling system for recording labels
- WayAround – an app for your smart device that provides on-demand details about everyday things.

Lesson 10: Five Essential Tasks

Introduction

Many tasks are essential for everyday life, like safely taking medication, using money to manage finances, keeping track of dates and time, signing documents, communicating via telephone, eating a meal in a restaurant, and reading for pleasure and work.

You can probably name other tasks that are priorities for you. This lesson discusses five of these important tasks: taking medications, using coins and currency, talking on a telephone, time management, and signing your name. Other lessons in this series cover additional essential tasks.

Lesson Goals

- Learn to organize, label, and manage your medications
- Make informed decisions about selecting a clock, watch, and calendar
- Learn to perform the three steps for making a phone call independently
- Learn to identify US coins and provide accurate change
- Learn methods to organize US currency for making independent purchases
- Determine if modifications are needed in your signature
- Learn to use adaptive tools and techniques for signing your name on documents

Medication Management

Identifying, organizing, and labeling medications should be high on your priority list as a person who is blind or has low vision. In this lesson, you will learn methods for identifying your prescriptions, over-the-counter medications, and vitamin supplements. Some of the methods are simple, like wrapping a rubber band around a bottle to identify it. Several talking labeling devices and apps that can be used on a smartphone will also be introduced. It's wise to use two different methods to keep track of your medications. Sometimes the simple method is quicker, while at other times, the talking device is the better way to go. If you use both, you have a choice. This section begins with simpler techniques and then describes some talking devices.

It is important to keep an up-to-date list of all your medications, including dosages, expiration dates, number of refills, and prescribing physician for each. You will need this list for your annual checkup with your primary care doctor and for any specialists or home health services you see. You will also need the list for your use in an accessible format, like large print, braille, audio, or electronic.

Identification

One way to identify medications is by shape. Examine the medications you take every day: Are there noticeable differences in the bottles or pills' shape? If you have five or fewer different medications, and each is a different shape, then organizing by shape may be sufficient for your needs. Remember that the pharmacy or manufacturer may change the shapes of bottles or pills, so you can't rely on this method alone. Organize your medications on a tray with a lip. This method prevents bottles from rolling off the table and can keep dropped pills contained. Keep your medications in an order that makes sense to you.

People with reliable color vision may be able to tell medications apart by the color of the pill. Some pharmacies will also use different color caps on bottles to help with identification. If identifying by color is not a good option for you, ask your pharmacist to use bottles of different sizes for each medication or to use differently shaped tops for each bottle.

Location is also a good method of separating medications. If you take some medications at night, you could set those on the table next to your bed. You could then put your morning medications on a tray in the bathroom and

midday medications on the kitchen table. The exact arrangement doesn't matter. What does matter is being consistent and choosing a method that works for you. Remember the rule: Everything has a place and everything in its place.

There are many ways to label and organize medications. For example, if you have similar bottles of pills, you might wrap a rubber band around one of the bottles. Wrap the rubber band around the bottle twice if you take the pill twice a day. Another strategy is to use stick-on letters, which are available at craft stores. You might use a C for cholesterol, B for blood pressure, and D for diabetes.

Pill organizers are terrific tools if you take several pills a day. There are seven-day pill organizers available in various sizes with up to four compartments per day. The size you need depends on how many medications you take and how many times per day you take them. It might help put large print, raised letters, or braille on the organizer to locate the correct compartment. Even if you need help once a week from a home health nurse, friend, or family member to fill your organizer, you'll be set for a week once the task is done. You could also use a talking labeling device to fill the organizer yourself. If a pill organizer is not an appealing option, you can ask your pharmacy to place all your medications into blister packs by dose.

(Note that you must purchase all your medications from the pharmacy who is blister packing them for you.) With both pill organizers and blister packs, you can immediately tell if you missed any doses. This method is helpful if you have memory problems or get easily distracted. There are also organizers with alarms or alerts to help you remember to take medications. You can find several organizer styles in the online catalogs of companies that sell adaptive products for people who are blind or have low vision. These companies also have the option of ordering by phone.

Pharmacy Accommodations

Most pharmacists are happy to work with your needs and offer various accommodations for people who are blind or have low vision. Some pharmacies will even deliver medications to your home to simplify things further. Some common accommodations pharmacies may provide are:

- Easy-open bottles
- Differently sized bottles
- Differently colored or shaped bottle caps

- Large print labels
- Large print prescription fact sheets
- Daily doses grouped in blister packs
- Pill cutting if you take half doses
- Audio labels
- Free delivery
- Automatic refills

Most national chain and mail-order pharmacies now offer various free, accessible prescription labeling, such as Script Talk. Script Talk is a device that allows a visually impaired person to hear information printed on a pill bottle label. Check to see if your pharmacy offers this service. If yours does not, encourage the manager to provide this service, or check for other pharmacies that provide the service.

Audio Labels

Talking pill reminders can be attached to a prescription bottle. The reminder will beep when it's time to take the medication. They also can record and replay an audio message describing the container's contents and proper dosage.

Digital Audio Label, a device about the size of a pack of gum, is programmed by a pharmacist with the medication name, dosage, doctor's name, refill date, and other critical information. When you press the device's single button, the recording is played.

The Script Talk Station works in conjunction with specially tagged prescription bottles provided by participating pharmacies. When you set the pill bottle against the top of the Station or near a smartphone with the Script Talk app installed, the medication name, dosage, and other information are spoken aloud. The same company that makes Script Talk also offers Script View, large, 18-size font labels. Visit [En-Vision America](#) for more information.

The PENfriend voice labeling system (first mentioned in Lesson 9) uses special labels and a pen-type device. To use the PENfriend to label a medication, attach a PENFriend label to the bottle, then place the device's point against the label, push and hold down the record button, speak a message with all of the information you'd like to include, and release the

button. To listen to the message, put the point of the pen against the label and press Play.

Taking Medications

Along with carefully organizing your medications, you need safe systems and habits for taking them. For example, if you have three nighttime medications, you could keep them next to your bed on a tray. Open each bottle over the tray and hold your hand over the tray as you remove each pill. Replace the cap on each bottle before opening the next. If you prefer to take all the pills at once, then designate one corner of the tray or a small cup as the place to put each pill until you are ready to take all of them. This method will help you avoid accidentally spilling an open bottle or dropping pills on the floor. Taking your medications over the bathroom or kitchen sink is not recommended because it is difficult to retrieve dropped pills from a sink.

If you use liquid medications, such as drops for glaucoma, talk with your pharmacist about bottles that dispense only one drop at a time. You will want to create a similar routine with these medications. Most people find it easiest to sit down to administer their drops. It may be helpful to have a specific place in your home where your eye drops are kept, along with a box of tissues and anything else you may need. Using an eye drop guide can also help administer the drops accurately and without difficulty.

Pouring liquid medicine like cough syrup into a teaspoon can be difficult. Try using an eyedropper with the capacity to get the right dose to draw up the medicine. Then you can squirt it into a spoon that holds more than the needed amount, such as a tablespoon or soup spoon.

Diabetes Management

Diabetes is manageable, even after vision loss. Large print and talking glucose monitors can be purchased from several companies, and some are covered under Medicare. If you are insulin-dependent, you may already be using an insulin pen to take your injections. Most hospitals have diabetes educators who will work with you and train you to use adaptive monitors and other related equipment. These specialists can provide information about financial assistance for insulin and testing strips, which can be costly.

Time Management

Time management is important for a variety of reasons. For example, to safely manage medications, you need to know the time because some

medications must be taken at an exact time. Managing appointments requires knowing what time to arrive and being on time. Being able to tell the time independently allows you to control what goes on throughout the day.

Telling Time

You may have a way of telling time that is already working. For example, your vision may be good enough to see a clock on the wall with very large numbers and hands or the clock's digital numbers on a microwave or stove. You may have a clock that chimes every quarter-hour and bongs on the hour. If your method is working for you, then keep using it.

However, there are products designed for people who are blind or have low vision to make telling time easy. Several specialty companies sell products for people with vision loss, including clocks and watches, to suit various personal preferences. Some people find it easier to see white numbers on a dark background. Some prefer digital clocks with extra-large numbers, while others prefer talking clocks. What works best will depend on your vision and personal preference.

In addition to specialty companies, almost every mainstream electronics department or discount store sells clocks with large displays or clocks that announce the time. One popular version is the Talking Atomic Clock, which uses radio signals to automatically set the clock to the official US atomic clock time and date. Many include extra features, such as hour and half-hour chimes and indoor and outdoor temperature announcements.

Before you buy a clock, look at several clocks in the store or talk to a specialty company representative to get a thorough description of at least three or four models. You will want to make sure you can easily hear and understand the voice on a talking clock. Think about whether the voice is male or female, the available volume range, and the pronunciation used. Also, consider the number of features a clock offers. Setting instructions often grow more complex as the number of features increase.

Consider how you will independently set any clock you buy. Some clocks have a few steps that aren't audible or accessible. Also, find out what type of batteries are required and make sure the battery compartment is easy to open.

Many people do not have wall clocks or alarm clocks because they own other devices that make traditional clocks unnecessary. Think about the devices you use around the house or as you travel. Smartphones can be

fully accessible for people who are blind or have low vision and have the functionality to announce the time, set alarms, and set reminder alerts. They are also more versatile than most other clocks because the settings and chime tones can be adjusted.

However, for people who do not want to keep their phone on them or are not comfortable with the technology, a smart home device might work well. You might need help with the initial setup, but a device like an Amazon Echo, Google Home, or Apple HomePod may be ideal. These devices are voice-activated and respond to many commands, such as, "What time is it?" or "Set an alarm for 8:00 a.m." These devices also offer other time management functions, like setting appointments on a calendar and appointment reminders. These devices will be discussed in other areas because they can perform several tasks, including ordering items when they run low, providing the weather forecast, or looking up information on the internet.

Telling the time when you are away from home is also important. If you do not want to rely on your phone for telling time, consider a large print, talking, tactile watch, or smartwatch. The styles available are endless, and many look like traditional watches. Try various watches before buying one to make sure you can use, understand, and access the necessary features.

Large print watches have larger-than-usual numbers and high-contrast colors. Talking watches work the same way as the talking clocks discussed previously. They have a button that announces the time when pressed. Many offer an alarm feature and hourly chimes. These devices rarely have a volume setting, so they may not be ideal for people with hearing impairments or who don't want to disrupt quiet environments.

If your fingertips still have lots of feeling, you might try a tactile watch, often called a braille watch. Truthfully, there's nothing braille about these watches. They look similar to a regular watch. To feel the dots, you must open the watch crystal using a small latch, usually located at the 6:00 position. There are two vertical dots at the 12:00 and 6:00 positions; at 3:00 and 9:00, there are two horizontal dots. All other numbers have a single dot. Like regular watches, the stem is next to the three, and the hour hand is shorter than the minute hand. The minute hand extends over the numbers. One advantage of a tactile watch is you can check the time without disturbing anyone.

Before deciding to buy a tactile watch, practice using and setting one with a rehabilitation specialist. Examine the face of the watch carefully. Then have

the specialist set the watch at some easy-to-identify times, such as 6:00. The minute hand will be straight up pointing at 12:00 and the hour hand straight down pointing at 6:00. Other settings could include 3:00, 9:00, 6:15, 3:45, and 12:30. You can progress to identifying more difficult settings.

Tactile watches come in many styles and sizes. There are dainty women's watches with leather or bracelet bands. Because these have very small faces, they can be difficult to read. Another style is somewhat larger, about the size of a sports watch. There are also large wristwatches and pocket watches for men. Some women buy the pocket watches and wear them as a pendant on a chain because they are easier to read.

Smartwatches are becoming more popular, and some, including the Apple Watch, is accessible for people who are blind or have low vision. As with smartphones, an Apple Watch can verbally announce the time and other information. It can also tap or vibrate to provide helpful information. There are high contrast and multiple large print watch face choices for people with functional vision.

Calendars

Knowing the time is only one part of time management. Keeping track of appointments, birthdays, and social events is just as important. There are large print, braille, and electronic methods of keeping a calendar that can help you manage your time.

Many large print calendars are available in stores, and some people like to create their own. Specialty companies sell large print wall calendars that you can write on in large letters with a bold pen. Some large desk calendars have space for only two entries per page, giving you lots of space to write. Braille calendars of all sizes are also available. A braille calendar marketed by the American Printing House for the Blind displays photographs of artwork created by artists who are blind or have low vision.

Before losing vision, you may have used your smartphone, smartwatch, or tablet to keep track of time and appointments. Training can help you continue this habit using built-in magnification and speech software on your device's pre-installed calendar app. Many of these devices also have an option to record and access calendar appointments using voice commands.

If you cannot read print and don't want to use a smartphone, another alternative for keeping track of your appointments is one of the smart home devices mentioned previously, controlled with voice commands. These

devices can often be connected to a smartphone calendar, so you or a family member can access the list of appointments when away from home.

A low-tech alternative is a digital recorder that is easily transportable. Choose one with voice guidance to speak to you as you navigate the functions, including setup, folder organization, and menu navigation. Some of these recorders offer five folders: one for phone numbers, one for appointments, one for recipes, and so on. These devices can be used as calendars but are more difficult to manage than the other suggestions since all appointments get recorded in a folder in no particular order and without an option for reminders.

Telephone Communication

The telephone is the primary safety tool in your home. It lets you contact emergency services if you are seriously ill or feel threatened by someone and need the police. If you have broken glass on the floor and need help to clean it up, your phone connects you with a neighbor. If you need to confirm an appointment, the information is just a phone call away. For all these reasons, your telephone is a vital part of everyday life. Many people new to vision loss get discouraged after their first attempts to dial a familiar number and get it wrong two or three times. Landline phones will disconnect if more than seven seconds elapse between digits. It may be impossible to imagine dialing a number on a smartphone without seeing the keypad. However, dialing a phone does not need to be a source of frustration. Training can be helpful, but there are also some tips provided here to get you started.

For many, landline phones are the most familiar telephone model. Many people make accommodations for landline phones, like large, stick-on numbers you can attach to the phone buttons or buying a large-button phone. However, it is wise to learn alternative dialing techniques if you need to use a telephone away from home.

Regardless of whether you are dialing on a corded landline phone, a wireless handset, or a cell phone, the keypads are all alike. Visualize your phone or look at the keypad to refresh your memory if you have some vision. How many horizontal rows are there? How many buttons are there on each of the four rows? Now think about the order of the buttons. Row one: 1-2-3. Row two: 4-5-6. Row three: 7-8-9. Row four is the odd one: star-0-pound.

If you have a landline phone at home, try this practice exercise. Don't

worry: You won't be dialing unless you lift the receiver or push the phone button on a cordless phone. If you can, place your index, middle, and ring fingers over the 1-2-3. Move those fingers down a row, and place them over the 4-5-6. Can you feel the little dot in the center of the 5? This dot is your landmark on the telephone. If you are right-handed or dial the phone with your right hand, press the 4 with your index finger, then reach up and press the 1. Press 5 with your middle finger and reach up and press the 2. Do the same with your ring finger, pressing six and then 3. Do this several times until your muscle memory knows exactly how far to reach. Next, practice moving from the 4 to the 7, from the 5 to the 8, and from the 6 to the 9. This movement may not feel as comfortable. Even if you move your whole hand down to 7-8-9, slide your fingers right back to 4-5-6. Again, practice this several times. Some people use their thumb for the 0.

Before you try dialing a complicated phone number that goes from 1 to 0, from 3 to 7, and so on, practice numbers that don't move your hand very far. It's kind of like learning to type. You learn the home row first and then the letters above and below before learning the keys further away. You might want to mark 1, 9, and 0 with a raised dot similar to the one on the 5. If you need to dial 911 quickly, the numbers will be marked. Packages of clear bump dots can be purchased from specialty stores, so you don't cover up the numbers for sighted individuals.

If arthritis or neuropathy in your hands makes this technique too difficult for you, modify it by moving your hand up and down the rows on the phone. Mark the 1, 9, and 0 to help you reorient yourself to the buttons. Alternative options are available, like large-button phones or programmable phones. You may find available options by contacting your local senior center or agency that provides older individuals services.

Dialing the phone is just one step to making a phone call. Obtaining and remembering a phone number while dialing is the first step. Trying to remember seven to 10 numbers as you dial them is not easy. Practice reciting any important phone numbers you need to remember until it gets easier.

No one has every phone number in their phone book, memorized. If you have some usable vision, it may help record frequently used numbers in a large print address book with dark lines and wide spaces so you can write in large text. Some area phone services are more generous than others with free directory assistance calls.

Directory assistance is a feature of landline and cell phones that is

especially helpful for people who are blind or have low vision. To use free directory assistance, call the number for directory assistance and request the information you need. They will give you the number or even dial it for you. Directory assistance usually would incur a fee, but when the application proving you have a vision impairment is submitted, there should no longer be a fee for this service. You might also store frequently used numbers on the phone and ask the phone to dial Dr. Johnson, the pharmacy, the weather, or your daughter.

The third step of a phone call is recording needed information, such as days and times of appointments; addresses; directions; or environmental information, like floor numbers or number of stairs required to get to a new place. Specialty companies sell small digital recorders that will temporarily hold a little information or store addresses, phone numbers, and appointments until they are deleted.

Cell Phones and Smartphones

Landline phones are becoming less common and are being replaced by cell phones and smartphones. If you use a flip phone, also known as a feature phone, but struggle to see the keys or read the display, it may help determine if your phone has speech capabilities. You may need sighted help to set it up, but after that, the phone will speak every time you turn it on. You will hear phone numbers as you dial them, and caller-ID will be announced for incoming calls. Names and phone numbers can be added to the contact list for faster dialing. Some flip phones have full-feature voice guides that will read text messages and let you compose and send outgoing messages. Check the specialty catalogs for other cell phone options. Currently, one option is the BlindShell phone.

The limited functionality of flip phones has led many people who are blind or have low vision to switch to a smartphone. The touchscreen platforms from Apple, Google, and Microsoft each include two accessibility features for people with visual impairments: a screen magnifier and a screen reader.

For more details on using a smartphone, read Lesson 19.

Money Identification

You likely have years of experience earning, spending, and managing money. You've made house payments, paid rent, and shopped for groceries, clothing, and home furnishings. You've paid your monthly bills and enjoyed a variety of entertainment activities. Whether the onset of your vision loss was sudden or gradual, you may find yourself struggling with

paying bills or identifying coins and currency. There are strategies for all these tasks that will help you regain your independence in managing your money.

The following strategies describe ways to tell coins apart and keep track of paper money without relying on vision. These tips will restore your confidence in handling cash daily and help you regain a sense of independence.

The need to differentiate a five-dollar bill from a twenty-dollar bill or a quarter from a nickel may arise several times a day. When you purchase something at a bookstore, receive change, use the ATM, or buy a drink out of a vending machine, your knowledge of coins and paper currency makes a difference in the transaction. The US mints six coins: penny, nickel, dime, quarter, half-dollar, and dollar. Dollar coins are rarely given as change, but they are not difficult to identify because of their size. Half-dollars are also rarely received as change, and they are considerably larger than a quarter. Now you are left with the four most common coins given as change and used in vending machines. The largest and smallest of these, the quarter and dime, have serrated edges. If you run a fingernail around the edge of these two coins, you can feel the grating sensation on your fingernail. You can probably identify a quarter easily because of its two distinctive characteristics: size and the serrated edge.

Pennies, nickels, and dimes can be confusing, especially if you have a mixture filling your pocket. Although a penny is slightly larger than a dime, the size is similar, but the edge is smooth, not serrated like the dime. Likewise, there is not much difference in the sizes of a penny and a nickel. The nickel is slightly larger, and the edge is thicker. Both have a smooth edge, not serrated, and the nickel's thickness is a good identifier. To build confidence, you might put together a bag of mixed coins and practice telling one from another. Practice counting out various amounts of change: 42 cents, 67 cents, 19 cents, and so on. Even if you give a dollar bill instead of counting out change, you may need to make sure you've received the correct change from a transaction.

US paper currency cannot be differentiated by touch. If you have low vision and the lighting is sufficient, you may be able to distinguish the denominations of bills. The numbers are fairly large, and the picture on the front of each bill is distinguishable. If you have no usable vision, you have two options when you receive currency as change: You can ask the clerk to identify each bill as you receive it, or, if you know the amount you should

receive, you can ask for specific denominations and, therefore, control the transaction. It is helpful to extend your hand as you hear a cashier getting the change and ask for the bills to be handed directly to you in order of denominations. That way, the cashier won't hand it to the person with you or count it out on the counter, leaving it for you to find.

Some people feel more comfortable carrying a small, talking currency identifier when shopping for checking denominations of currency. The iBill is free through the Department of the Treasury, and it is quite accurate. It can be applied for through the National Library Service. There are also free money-identification apps available for smartphones.

To simplify transactions and ensure accuracy, you will probably want to organize your currency by denomination using a money-organizing wallet or a folding system. There are numerous options, so find the system that works best for you and keep it consistent. Money-organizing wallets, which have separate compartments for each denomination, are a simple solution. If you prefer to create a folding system, one method is to leave \$1 bills flat; fold \$5 bills in half, creating a square; fold \$10 bills in half lengthwise; and fold \$20 bills in half, like the \$5 bills, then fold in half again. This technique is one example; as long as you come up with a system that makes it easy for you to differentiate bills consistently, it will be effective. If you use a money-organizing wallet, you may also want to use a folding system still in case you accidentally put a bill in the wrong compartment. Some wallets have more than one compartment for change, so pennies can be separated from nickels since it can be hard to tell those two apart quickly.

As a precaution, you might want to choose never to carry a bill larger than a \$20 bill. It is less costly to make a mistake with a smaller denomination or accidentally drop a less valuable bill. Also, devising a folding system is easier if you only carry four different denominations.

Many people prefer to use a credit or debit card for transactions rather than using cash. These transactions can be achieved in various ways and are covered in more detail in Lesson 12.

Finally, don't let a customer's shuffling feet or mumbling behind you force you to rush through a purchase or make a mistake. Instead, safely get ready to complete your purchase at the register while waiting in line. If possible, estimate what you owe and be prepared with your wallet. When you complete a transaction, take a couple of steps away from the counter and put your money and wallet away before leaving the store. There is additional information on money management in upcoming lessons.

Signatures

Sighted children learn to write their name and display it with pride, often on the refrigerator door. By third grade, many children have developed a unique signature. As an adult, you have probably used your signature to sign legal and financial documents, checks and deposit slips, credit card slips, birthday and thank-you cards, or sign-in sheets at the doctor's office. Creating a signature is a cornerstone of personal literacy.

A person who has lost some or all of their vision has not lost the ability to sign their name. Our bodies develop muscle memory to write a signature. Signatures often look the same as they did before a person experienced vision loss, perhaps except for dotting an "i" or crossing a "t." What does change is the ability to monitor how your signature looks. If you are worried about your signature being legible, consider how many sighted people have illegible signatures!

Try this exercise. Start with a plain piece of unlined paper. Write your signature once at the top and once at the bottom, and twice in the middle. This spacing will help you relax and give you plenty of room to write in an unconfined space. Now ask a sighted friend or family member how your signature looks. Are the four samples similar? If your name includes letters with dots, consider leaving them undotted; create four more samples and see if it's easier to write when you leave out the dot. Crossing an "x" or a "t" can be hard unless it comes at the end of a name, such as Alex or Pat. With a name like Alexandra or Patrick, you might make a slight modification: Stop and cross the "x" or "t" before finishing your signature. At first, it might feel awkward to interrupt your movements' flow, but you will develop a new pattern in time. If you can still see your handwriting, you may not need to make any changes even if you can't read it.

A few adaptations can help you orient your signature to the signature line on a document. You can buy a signature guide that outlines the exact place where you need to sign. These guides are about a credit card's size with a long rectangular opening (half-inch by three inches) in the middle. They are usually made of flexible plastic in a dark color to provide color contrast. Some have an elastic band along the bottom that allows for signatures with letters that drop below the line. A friend, family member, store clerk, bank teller, or another helper can line up the guide's opening with the signature line for you to sign your name in the appropriate place.

In addition to signature guides, some homemade guides are useful in different situations. For example, if your signature is especially long, you

may prefer using a homemade signature guide. Making a homemade signature guide can be done similar to making the typoscope mentioned in Lesson 7. Ask a friend or family member to help you create a guide out of cardboard or an expired debit or credit card. You can make it in any size to accommodate your signature.

Another alternative is to ask the store clerk or server in a restaurant to fold a receipt backward so when it is unfolded, it makes a crease along the tip or signature line. This technique makes it easy to write a signature or other information while feeling the tactile raised line. With this method, descenders in letters like "y," "j," "f," or "g" will not be impeded by the frame of a basic signature guide.

One way to sign a letter-sized document is to use tape or sticky notes to identify the lines. If there is a larger area or more information needed than just a signature, two or three sticky notes can be placed along or just below the signature line. The edge of the sticky notes can be tracked with one hand as the other hand signs.

If a signature guide is not available, the top edge of a credit card or ID card can be placed under the signature line of a store credit card slip or a document as a guide.

For people with functional vision, increasing size or contrast may be needed to identify the lines. Someone can write an X at the beginning of the line or darken the entire signature line with a bold pen to make signing easy. Switching to a pen with a slightly thicker tip may help you better see your signature and handwriting.

Alternative signatures (using your first and middle initials or shortening your name) are perfectly valid as normal signatures. Although an "X" is acceptable, your signature carries more authority and validity. Unless you have a medical reason, like arthritis, tremors, or muscle weakness, and need to use a signature stamp, it's better to use your signature regardless of how it appears.

Too often, people with severe vision loss sign important documents without knowing the complete content of what they're signing. It can feel awkward to ask someone else to read three, four, or ten pages aloud. However, it is critical to never sign an important document without having a trusted friend, family member, or legal advocate read the entire document to you. People who use a computer or smartphone may prefer to have documents read aloud by software.

Summary

This lesson covered five essential skills that most people who are blind or have low vision need to use regularly. We discussed adaptive methods and equipment to make these tasks easier to complete independently, but other methods could be equally effective. Experiment with the methods provided and your approaches to determine what will be most effective. As mentioned earlier, the method you use is not as important as finding something that works and being consistent. With practice, you will be able to do these tasks with ease.

Suggested Activities

Try these activities to help you better understand the lesson and develop adaptive skills:

- Practice signing your name multiple times on a blank sheet of paper. Do this regularly to maintain muscle memory.
- Practice dialing the phone in several different ways. Use a landline as well as a cell phone if you have access to both.
- Compile a list of your medications and determine which organizational and labeling methods you will use.
- Practice identifying the denominations of coins by touch. If you find that two are hard to distinguish from each other, create a method to separate those coins.

Resources

To find products described in this lesson, such as a signature guide, organizing wallet, bump dots, or labeling systems, see the following companies.

- Envision America - ScripTalk
- Independent Living Aids
- MaxiAids
- LS&S Products
- National Library Service – iBill

Lesson 11: Personal Management, Grooming, and Eating Techniques

Introduction

Many adults with new visual impairments may have concerns about their appearance. Shaving, applying makeup, and caring for and styling hair may seem like impossible tasks without the use of sight. Even keeping toothpaste on a toothbrush or staying oriented when using bathroom facilities may be challenging. Also, adults with new visual impairments may feel embarrassed when they dine in public, prompting them to order foods they can eat with their hands, like sandwiches, to avoid using silverware. Lack of confidence with these daily tasks can damage a newly visually impaired person's self-esteem.

Many people who enter vision rehabilitation training are embarrassed to tell their instructors they struggle with these personal tasks. You may feel the same. This lesson will share suggestions and strategies that have worked for others that experienced vision loss. These techniques may help you regain confidence in managing your appearance and the ability to enjoy dining out.

Lesson Goals

- Identify adaptive techniques for putting toothpaste on a toothbrush
- Use spatial orientation and organization to move freely and confidently locate and use items in your bathroom
- Shave your face or legs safely using skills learned in Lesson 3 or low vision techniques
- Identify ways to make hair care more manageable
- Describe ways to organize and label skincare products and cosmetics
- Apply foundation, mascara, blush, and eyeliner using techniques from Lesson 3
- Care for your nails independently with four simple steps
- Assess the safety of your bathtub and shower
- Develop techniques for eating at home and in a restaurant

Brushing and Flossing Teeth

You have not lost the ability to brush your teeth, but you may have difficulty measuring the right amount of toothpaste or the ability to get toothpaste onto a toothbrush. One technique that can help is placing your index finger

on the bristles of the toothbrush. Without squeezing, drag the toothpaste across the bristles along the side of your finger. Do this several times until you get a sense of the size of the bristle. Then squeeze the tube gently as you drag it over the bristles beside your finger. You could also place your index finger on one side of the bristles and your thumb on the other and drag the toothpaste between your index finger and thumb. If you have difficulty keeping the toothbrush level when applying toothpaste, squeeze a little toothpaste onto your index finger instead and then rake it into your mouth with your teeth. Another technique is to squirt the toothpaste directly into your mouth; squirt toothpaste onto your tongue so you can feel when you have the right amount. Press the bristles of your toothbrush into the toothpaste and then brush.

Another strategy used by people with some vision is to buy a brightly colored toothbrush. The dark, contrasting color around the edge of the white bristles may make it easier to apply toothpaste. Storing the toothpaste and toothbrush in a container darker or lighter than the bathroom wall and counter can make them easier to locate. If you share a toothbrush holder with others and are having difficulty identifying your toothbrush, you could put a rubber band around the handle of your toothbrush to identify it.

If you're having trouble measuring the correct amount of dental floss, try wrapping it three or four times around two fingers on one hand and then two or three times around two fingers on the other. Your non-dominant hand will keep the floss taut while you unwind a little at a time from your dominant hand.

Spatial Orientation

Lesson 4 discussed moving safely within an area of your home or other space. This technique is called spatial orientation. This technique can help locate large objects in the bathroom, like the bathtub or trashcan, or for smaller objects on the counter. For example, the space on the counter around the sink can be divided into sections, with oral care items in a corner, shaving equipment in another corner, and so on. Eventually, you will find yourself reaching for those items just as if you could see them sitting there.

Spatial orientation techniques can also help you locate and confidently use objects in the bathroom. One technique can be particularly useful for men to stay oriented while standing to use the toilet. Try envisioning locations around the rim of the toilet like a clock face, with 6:00 being nearest you (at

the front of the toilet) and 12:00 being furthest away (near the back of the toilet). Then place your left leg at around the 8:00 position and your right leg at around the 4:00 position, with both legs touching the rim of the toilet. Then move your left leg a short distance straight out to the left of the toilet's 8:00 position, about a half a step. Then, with your right leg, step straight backward about one step from the 4:00 position. This technique has helped some men remain oriented while using the toilet in a standing position. You may need to adjust this technique a bit to accommodate your height.

Shaving

From Lesson 3, you know that your body still remembers how to do tasks you've done repeatedly, whether you have vision or not. This type of memory is called muscle memory. Lesson 4 covered how shaving requires only three skills, and the same three skills are used to apply makeup and do other, similar tasks. The three skills are the use of landmarks, overlapping strokes, and the grid pattern technique.

Before you lost your vision, you may have shaved your face while standing in front of a mirror, visually monitoring your progress. If you have no usable vision, you can still stand in front of the mirror while shaving if you prefer. One strategy is to visualize your face before you begin to shave. Think of the parts of your face as landmarks: each cheek, your nose, upper lip, chin, forehead, and ears. Next, move your right hand over your right cheek, then your left hand over your left cheek. This technique gives you a nonvisual sense of your cheeks' size and shape and will help you use overlapping strokes to remove facial hair. Use an overlapping, circular motion when using an electric razor.

Similarly, explore your upper lip and your chin. Determine the length of your sideburns by comparing their bottom edges to the bottom of your earlobes. It does not matter which part of your face you shave first, but try to always begin with the same area, so you don't miss an area.

If you prefer to use an electric razor, you may need to go over your face more carefully, making smaller circular movements. Remember, it's perfectly fine to go over the same area twice.

Before applying shaving cream, if you are using a safety razor, keep the safety shield on the razor and practice making overlapping strokes on each cheek, upper lip, and chin. Practicing can help you get comfortable with the process before you begin shaving. When shaving your sideburns, try shaving the area around each sideburn first by covering the bottom edges with a finger. After shaving each area, use your fingers to locate the areas

with shaving cream.

If you have some usable vision, try hanging a dark or light towel on a door or towel rack behind your head to help outline your face. If you cannot see your face clearly in the bathroom mirror, try using a magnifying mirror about 12-14 inches from your face. Adjusting the light can also make it easier to see what you are doing. Lighting positioned in the middle of your ceiling can cause shadows and lights on the counters, creating glare, visual distortions, and eye sensitivity. A light that illuminates your face but doesn't point directly into your eyes can help.

If you are a woman who is accustomed to shaving in the shower without a mirror, this task may not be too difficult to complete with vision loss. You likely could not visually monitor shaving under your arms even with full vision due to the nature of the angle where you are shaving. These three steps might be helpful when shaving:

1. cover your leg with a sufficient amount of shaving cream or body wash to avoid a razor burn
2. Use an overlapping grid pattern as you shave around your leg
3. Check with your fingers to see if you removed all the hair. If not, go over any areas you missed

A note of caution when shaving your legs while standing in the shower: shower floors can be slippery, and some people become light-headed when they bend over. You may want to try sitting in a shower chair and propping your foot on a small, waterproof stool.

Haircare

For men and women, hair care begins with a complimentary style and haircut for your face. If you have problems managing your current style, ask your hairstylist to suggest an easier style that is still complimentary. Also, ask how to style it yourself.

When you're in the shower, try storing items like shampoo, conditioner, body wash, and soap in a caddy that hangs over the showerhead or shower door. Some showers have built-in places for these items. Haircare products can be placed on one shelf, and bathing products on another. If your shampoo and conditioner are in similar bottles, try putting a rubber band around one so you can distinguish between the two.

Applying Makeup

Begin by organizing and labeling your skincare and makeup products.

Skincare products often come in jars, tubes, and bottles that are indistinguishable from one another. Braille users can make word labels for these products. If you have usable vision, you can create labels in large, bold print. Another technique to try is creating single letter labels out of materials you can feel tactilely, like electrical tape, puff paint, or glue. For example, put the letter "C" on your cleanser and an "M" on the moisturizer. Use a basket, tray, or bag to keep skincare and makeup items together. You may prefer to use an electronic labeling device or reader. Label your makeup unless an item is easy to identify tactilely, like mascara. Label each color of eyeshadow, blush, and lipstick.

One way to organize your makeup is to arrange the items you use in the order that you use them. If you use mascara, consider putting it on first. That way, if you accidentally touch the bridge of your nose or cheek with the applicator, you can remove it before applying foundation or blush. If you have uveitis, glaucoma, iritis, or experience eye infections, it's better for your eyes if you don't wear mascara.

You may want to try using facial landmarks, like your forehead, eyelids, nose, cheeks, and chin, as you apply foundation, blush, and eyeshadow. Also, a sponge or makeup brush may help to blend in the foundation smoothly. Try applying consistent pressure and counting the number of strokes you use to load the brush with blush or eyeshadow, and then tap the brush against the side of the sink before applying to your cheeks or eyelids. It may take practice to apply the same amount to both cheeks and eyelids consistently.

Doing some prep work before you put on mascara or eyeliner may be helpful. Use the fingernail of your dominant hand and draw a line just under your lower lashes. Practice this for a few days to develop consistency. Next, use an eyeliner pencil with the cap on to practice drawing lines under your lower lashes. Repeat these actions to develop muscle memory. When you can keep the pencil under your lashes, you are ready to remove the eyeliner's cap. You may benefit from placing the index finger of your non-dominant hand in the corner of your eye to act as a buffer as you line your lower lid. If you are right-handed, place your left index finger in the outside corner of your left eye and put the point of the eyeliner pencil next to it before you start to draw the line. Then put your left index finger on the inside corner of your right eye. If you are left-handed, reverse this procedure.

As you prepare to apply mascara, try using your index finger as a mascara

wand and gently stroke your upper lashes. Practice this often until you can stroke your lashes without poking your eye. Next, practice stroking your lashes with the cap on the wand. Finally, remove the cap and place the index finger of your non-dominant hand in the corner of your eye to protect it from the point of the wand as you stroke your lashes. Use the same procedure described above for eyeliner. Some prefer to hold the wand just beneath their upper lashes and blink to coat their lashes. If you have some residual vision, you may be able to use background lighting to line up the mascara wand with your eyelashes.

You may prefer to use softer, more subtle shades of cosmetics to avoid applying too much. It might be helpful to contact a cosmetic consultant and have a makeover. Ask them to observe you applying your new makeup several times until you feel confident with the new skills.

Nail Care

Nails that are clean and filed or trimmed make a positive impression. If you have always kept your nails shaped or trimmed, you probably will be able to continue this task with vision loss without much of a problem. If you have diabetes, you might consider having a professional or podiatrist care for your toenails. Medicare covers the cost of podiatrist appointments for trimming toenails.

If you pride yourself on having beautiful manicured, polished nails, you can still perform this task if you adopt a few adjustments and practice. If you have some usable vision, place a contrasting colored towel under your hand. The contrast will allow each finger's outline to stand out and help you see where to apply the polish.

If you have always painted your nails, consider trying these steps:

- Take a dry nail polish brush and stroke across your nails as if you are polishing them. Do this several times, feeling the brush as it touches each nail and getting familiar with the muscle memory as it develops.
- Apply a clear polish. Practice with clear polish until you feel confident with your skill.
- Keep your nail polish in the refrigerator. It is easier to feel cool polish as you apply it to your nails, and cold polish spreads more slowly.
- Finally, try painting your nails with a bright color. Use a manicure stick dipped in polish remover if you get some polish on the edge of your finger or need to clean around a nail. Don't be embarrassed if you make a mistake. Even professionals have to do some clean-up!

It is okay if you don't feel confident polishing your nails. Consider pampering yourself with a professional manicure and throw in a pedicure from time to time!

Bathing

You probably do not have difficulty bathing related to your vision loss, but some safety reminders might help. Your shower and tub and the floor immediately surrounding these areas are some of the most dangerous areas in your home. Always put down a bathmat that is large enough to cover the area where you might drip water getting in and out of your tub or shower. Some shower doors have troughs along the bottom edge that collect water from the shower head. When you open the door to get into the shower, the water in the trough can leak onto the floor. Make sure your bathmat is wide enough to catch the water.

Regardless of age and amount of usable vision, it is a good idea to have safety bars installed in your showers and bathtubs. Having something to hold onto as you get in and out of a bathtub or shower is recommended. Safety bars should also be installed on shower walls so you can hold on as you bathe. Also, slip-proof material on shower and bathtub floors or heavy, slip-proof mats with holes that allow water flow to the drain are recommended for increased safety. Take an inventory of your bathtub and shower and add these safety items to reduce the risk of an accidental slip or fall.

Do you remember the section in Lesson 5 about the upper protective technique? This technique protects your head, face, and chest from open doors and cabinets and anything else you might run into at face level. It is important to avoid bending over without using the upper protective technique. Individuals who are blind or have low vision should use the protective technique in the shower to avoid hitting their head or bruising their face on bathtub faucets or other protruding hardware.

Eating Techniques for Home and Dining Out

If you are newly visually impaired, you might experience difficulty performing some of these common tasks at mealtime:

- Locating food on the plate
- Pushing food off the plate
- Cutting meat and large vegetables, like asparagus or broccoli
- Using condiments
- Buttering rolls and other types of bread

- Eating salad with large pieces of lettuce
- Locating a beverage without spilling

Although these problems can occur at home or in a restaurant, it's easier to improve the situation while at home. For example, poor lighting may contribute to locating food on your plate or pushing food off if you have low vision. You can increase the amount of light with brighter lightbulbs or by setting a lamp on the table at home. You can solve the problem of food falling off your plate by using a placemat in a color that contrasts with your plate. For example, a dark placemat under a white plate helps you see the plate rim more clearly. Some people even bring a dark placemat when eating out because most restaurant dishes are white. Solid-colored plates also make it easier to see most foods. Some people with low vision find it helpful to pour coffee into a light-colored cup to see the cup's rim better as the coffee level gets near the top.

If you do not have usable vision, try putting fewer items on your plate. After a few bites, go around the edge of your plate and push the remaining food toward the center with your fork. When eating foods that are easy to push off the plate, like peas or corn, use a piece of bread or your knife blade as a "bumper."

Regardless of how much vision you have, you may find it difficult to locate your beverage on a table. One strategy is to make a loose fist and place it palm down on the edge of the table. Without lifting your fingertips, gently move your hand around the edge of your plate to locate the glass. Once you locate the bottom of the glass, uncurl your fingers and grasp the bottom of the glass. You will likely never turn over a glass if you use this technique, and it works both at home and in a restaurant.

Some newly visually impaired people stop eating salad due to the challenge it presents. This challenge is understandable in a restaurant where salad ingredients are often large. At home, you can break lettuce into smaller pieces, cut tomatoes into small wedges, and slice other vegetables or fruit into bite-size pieces. When dining out, some restaurants offer chopped salads. You can ask your waiter how a salad is served, and if it comes in large pieces, ask to have your salad cut up before it is served.

Even at home, condiments can be challenging. Distinguishing salt and pepper shakers is a common complaint and easily fixed. Salt is heavier than pepper. Unless the pepper shaker is full and the salt is almost empty, you can compare the two shakers and quickly identify the salt. Salt will

make a little noise if you shake it, and pepper is silent when shaken. You can label the shakers by putting a tactile marking, like a rubber band, on the one you use most often. Another method is to measure the amount of salt or pepper you wish to add to your food, shake it into your palm, feel it to ensure it is the desired amount, then sprinkle it onto your food. If you have too much, discard the extra on the side of your plate or a side plate.

It's generally easier to control salad dressing, ketchup, mustard, and mayonnaise if you use squeeze bottles. Many restaurants serve salad dressing in small cups; you can either pour it on your salad or dip one bite at a time in the cup. If you like ketchup and mustard on a burger and the containers on your table are not squeeze bottles, pour some on your plate and use a spoon to put it on your burger. Or you can ask the server to bring your burger with the condiments added.

Cutting a steak, chicken breast, chop, or fish filet may take practice. As you try the following techniques, visualize what you are doing. First, use your fork to trail around the outside of the piece of meat. This trailing technique gives you an idea of its size. Next, cut it in half and set one half aside. Now you have the choice of cutting up an entire half or cutting one bite at a time. Find one end of the meat with your fork. Place it into the meat about 1 inch from the edge. Place your knife behind the fork tines and cut as you would if you had vision. Remember, you still have the muscle memory to perform this task. Once you've cut through the meat, lift the fork slightly and slide the knife under the bite you've just cut. If it's cut completely through, the knife will slide under it.

In a restaurant, you may not feel comfortable cutting your meat until you have had enough practice. In this case, you can ask the server to bring your meal with the meat cut. It's not uncommon for even the most confident person who is blind or has low vision to make this request. Make your request with confidence, and don't feel embarrassed. You can order vegetables that you know will be easy to eat or ask for asparagus spears or green beans to be cut in half.

When you serve yourself at home, you know where you placed the meatloaf, the mashed potatoes, and the vegetables. When a server in a restaurant sets your plate in front of you, they may tell you the plate is hot, but they won't say that your meat is at 6:00, your potato at 12:00, your beans at 3:00, and your bread at 9:00 (based on the positions of a clock face). You can ask your server or a companion to tell you where each item is located, or you can use your fork to go around your plate and identify

each food by texture.

When it comes to buttering bread, some people who are blind or have low vision choose to eat their roll with no butter or only use it as a bumper. Others practice at home to master the technique of buttering bread. One way to do this is to use a spoon to measure the amount of butter you want. This way, you can scoop a spoonful onto your bread and then either use your knife or a spoon's back to spread the butter. Placing the butter in the center of the bread and spreading it toward you is often easiest. Once you have spread some of the butter, turn the bread clockwise a quarter of a turn and repeat the process to cover the entire piece of bread. This method is also useful for spreading peanut butter, jam or jelly, mustard, mayonnaise, and other condiments.

Summary

Hopefully, you've found many of the techniques in this lesson to be easier than you anticipated. We hope these techniques will help you gain self-confidence and empower you to enjoy socializing around a meal with friends and family at home or in your favorite restaurant.

Suggested Activities

- Identify a task where you can increase the contrast of the objects you are using. After trying the task with increased contrast, look for other opportunities to implement this strategy.
- Try two different methods for applying toothpaste to your toothbrush.
- Review your bathroom for organization and safety. Adjust at least two things to increase your organization and/or safety.

Lesson 12: Accessing Printed Information

Introduction

Accessing printed information is one of the most common challenges for people who are blind or have low vision. Printed information is all around us. Our daily lives are full of signs that advertise restaurants, grocery stores, movie theaters, and other services and businesses. Street signs, highway markers, traffic control signs, and bus stop signs help people navigate their surroundings. Mail, flyers, and announcements alert us to complete activities and tasks.

Electronic information has changed the way society functions, making the amount of printed information available endless. Want to know what is on the restaurant's menu? Search it on your phone, and in seconds, you have the answer. Planning a trip to Niagara Falls? Go to Google Maps or input the route into your GPS. Today, most businesses communicate with customers via websites and social media.

Before vision loss, you may have used computers and mobile devices in your daily life, and now you may think you can't access those tools. With available accessibility features, you can keep using most of the electronic devices you previously used. Paying bills online, sending e-mails, responding to text messages, or checking your calendar can be done on a smartphone or tablet. With advances in technology, printed information is currently more accessible to people who are blind or have low vision.

This lesson will discuss both non-optical and optical tools for accessing printed information. Lesson 19 will explain how to use smartphones, tablets, and computers to accomplish tasks.

Lesson Goals

- Learn to access print and handwritten documents using personal readers, magnification devices, and video magnifiers
- Learn to manage monetary transactions using debit and credit cards
- Learn options to pay bills using checks and bank transfers
- Learn methods to access financial records using large print, magnification, or automated phone systems
- Learn to communicate via handwritten correspondence using handwriting guides

Personal Readers and Magnification Devices

While most print communication tasks can be handled with electronic devices, your mailbox likely still contains bills, invitations to events, greeting cards, handwritten notes with photos, and junk mail. Paper forms may need to be completed. Restaurants have print menus that are difficult to read in dim lighting. When paying with a debit or credit card, the bill's print and signature line may be hard to see. There are labels to read and items to find while you are shopping.

Personal Readers

As the examples above indicate, there are situations when it's faster and more convenient to access printed information with another person's help, rather than an electronic device. These situations may involve engaging the

help of a designated person or asking for help on a situational basis. For example, consider your print mail. It's frustrating to spend time scanning six documents or taking pictures with your phone, only to discover three of them are junk mail. However, a personal reader can quickly scan each envelope and separate the junk from the items you need to read.

Although having a reader is not the right solution for everyone and is not always feasible, it is helpful for some people. Whether you hire someone as a reader or use volunteer services, treat the relationship like a professional one, even if the reader is a friend or family member.

If you decide to hire a reader, there are a few things to keep in mind. When first meeting an applicant who is a stranger, even if they are recommended by someone you know, make sure you have someone with you. Do not meet alone with anyone you do not know personally. As you interview potential readers, you may wish to discuss the following topics. These topics can be modified if the applicant is a friend, family member, or neighbor:

- Carefully explain the job duties and expectations to the applicant. For example, tell the applicant how often a reader is needed, how many hours the reader is needed for each session, the type of materials the applicant will be reading, and salary (if applicable).
- Ask about the applicant's educational background and the types of books they enjoy reading. The answers may give you an idea of their vocabulary level.
- Ask about the applicant's experience reading aloud. You will want a reader who reads well out loud.
- Have every applicant read aloud to you during the interview. Provide at least three different types of documents about one-page in length for the applicant to read aloud.
- Ask about the applicant's current job or work history to learn about their work habits, availability, organizational and problem-solving skills, and ability to maintain confidentiality.
- Ask why the applicant is interested in reading for you.

When you find an applicant you'd like to hire, discuss the following:

- Request three references, unless you know the applicant personally.
- Discuss the privacy measures you expect from the reader. It may help if you make sure to protect yourself, your home, and your personal information.

- Agree to a short trial period (three months, for example). During this time, both you and the reader can decide if the working relationship is a good fit.
- Set a definite time and location for meetings. It doesn't have to be in your home. Let the reader know that punctuality is extremely important and use the scheduled time for reading and related tasks.
- Establish a clear cancellation policy.
- Keep a log of the reader's hours that both of you initial after each session.
- If the reader is paid, both of you should keep financial records and review them monthly.

Your preparation responsibilities before meeting with the reader for a session may include the following:

- Have all materials ready at least 15 minutes before the scheduled session.
- Be prepared to work and avoid chit-chat until the scheduled session is over.
- Turn off your phones during the reading session unless an important call is expected.
- Thank the reader even if they are paid. Everyone likes to be appreciated!
- Do something special every month to show your appreciation for a volunteer reader.

Whether or not you hire a personal reader, there may be situations where another person will need to help you access visual information. Shopping or other errands often are easier if you request help. Most customer service staff is happy to assist with shopping, especially if you frequently shop in the same stores. In this situation, the best tools are a smile and a friendly personality. Even if you aren't usually outgoing, do your best to engage with the person to make them feel comfortable. Humor is a good way to help the person relax.

If you are grocery shopping, have a shopping list ready to give to the person assisting you. Make sure your list follows the layout of the store. If you have unusual items on your list, describe them to your helper. For example, note that the gluten-free cereal is in an orange bag with a purple "GF" in the top right corner. If someone is especially helpful, give positive

feedback to the store manager. The next time you go shopping, that person will want to help you again! If you shop when the store is less busy, your assistant will have more time to help.

At times, you may want to dine alone in a restaurant. If you cannot read the menu with a magnification device, ask the server to read the menu to you. It's a good idea to plan ahead and perhaps ask for the list of seafood or pasta options, for example, rather than asking to hear the entire menu. It also might be helpful to ask the server to read the bill to you at the end of your meal.

If you have an appointment where forms must be completed, let the office staff know you will need assistance and be punctual. If you have a personal reader or a family member to help, ask to have the forms mailed to you before the appointment so your reader can help you complete them. If you are comfortable using a tablet or computer, it may be easier to complete the forms electronically.

Magnifying Devices

If you have some vision, you can use a handheld magnifier to sort mail by enlarging logos on envelopes. Because of their size and portability, handheld magnifiers are great for quick, spot-reading tasks, like reading menus, store coupons, clothing tags, or business cards. A lighted stand magnifier may work for reading short documents or handwritten notes. Depending on the magnification you need for comfortable reading, some lamp/magnifier combinations may eliminate the need for help with reading and identification. These three types of devices are rather inexpensive and can be used in a variety of situations.

Desktop electronic video magnifiers can be expensive, but they allow people with low vision to independently handle most reading and writing tasks. A portable electronic magnifier is small enough to take with you to doctors' offices and other appointments where documents need to be completed. These magnifiers can also be helpful in restaurants and stores.

Financial Management

Lesson 10 discussed how to identify coins and identify and organize currency tactilely. Although cash can be an efficient way to handle purchases, it may not be the most convenient or comfortable method. You may not feel safe carrying a lot of cash or exposing the contents of your wallet to strangers nearby. Using debit and credit cards can eliminate these concerns. Both require you to swipe or insert the card and sometimes sign

a screen or receipt. A benefit of making purchases with a debit or credit card is that there is a permanent record of transactions, making it easier to find information when filing your taxes. For safety, you should never tell someone your debit card PIN. If you cannot complete a transaction independently with a magnifier or a device with accessibility features, purchasing with a debit card using the credit option is better.

However, each store is different, so it is important to feel comfortable with an alternative method. Start by asking the cashier for assistance. If you can locate the card processor and swipe or insert your card yourself, you can do that and then turn the processor to the cashier for them to select the necessary buttons and tell you if a signature is needed. Another option is to hand the card to the cashier to handle the transaction if a PIN is not needed. Either way, it is helpful to follow along and ask questions, such as your purchase's total amount. Later, you can call your bank or check the bank's app to ensure the transaction amount is correct.

Paying Bills

Some people do not feel comfortable paying bills online and prefer to use checks or bank transfers. There are several options for paying bills without using online banking. If you have low vision, you can ask your bank about large print or tactile checks. Even if you cannot read the print on a large-print check, the lines may be visible enough to fill it out correctly. A magnifier might help with this task. For people with limited or no functional vision, tactile options like check-writing guides or raised-line checks may be good options. On tactile checks, each of the five areas on the check is marked with a raised line to identify where to write. A check-writing guide is a template that has cutouts for the five areas of a standard check. Place the guide on top of your check and write within the cutouts.

Another way to pay bills is to have your bank set up automatic bank drafts or transfers. Most banks offer these services, but it's important to discuss with your bank because their process details may vary. For example, every month, you could have your utility bills, house payment, health insurance, phone bill, and internet bill automatically withdrawn from your checking account. The bills can be set up to be electronic rather than on paper, and the exact amount that is due will be withdrawn to cover the bill. Electronic options save you the cost of a stamp and reduce incoming mail to sort.

Reviewing Financial Records

Once they gain confidence with technology, many people who are blind or have low vision check bank statements and investments online; however, if

you are not comfortable using the internet or are awaiting training, there are other options. Reviewing statements and bank registers with an electronic magnifier can make the task doable for many people with low vision. Some desktop video magnifiers allow you to divide the screen, letting you view your bank statement side-by-side with your check register. This option is a convenient way to reconcile accounts.

Most banks offer automated phone service for accessing account information. Balances and transactions can be reviewed for checking, savings, brokerage accounts, and loans. It may also help if you develop a professional relationship with someone at each of your financial institutions in case you have questions. Tell them about your visual impairment and ask what services or accommodations they can provide to manage your accounts. There may be services that typically carry a charge, like having a broker make a trade for you, that can be waived.

Handwriting Guides

Communicating in writing is often challenging after vision loss, but it is an important skill. Many people enjoyed sending birthday cards, mailing handwritten letters, or writing grocery lists before vision loss occurred. These tasks can still be accomplished. Signature and check-writing guides have been discussed in previous lessons. There are also guides for other handwriting tasks. Specialty companies that sell products for people who are blind or have low vision offer templates for envelopes and stationery and a variety of full-page (8.5- by 11-inch) writing guides.

An envelope guide has four spaces for the addressee information and three spaces for a return address. The full-page guides come in several styles. One style is similar to check-writing and envelope guides, except it fits over unlined paper and has half-inch cutouts down the template. These guides are black, so the cutouts sharply contrast when used over white paper. You can attach them to a piece of paper with paper clips or clip the paper and guide onto a clipboard. Keep your place by attaching a paper clip to one side of the guide and move it from one cutout line to the next as you move down the page. A hinged writing guide is made like a folder, blank on one side with cutouts on the other. The paper fits inside. You can also find hinged guides for envelopes, checks, and greeting cards. The greeting card guides have several lines for text, followed by a shorter line for a signature. A hinged guide's advantage is that the page is held more firmly in place and is less likely to move as you write.

No matter which type of guide you choose, it takes practice to become

comfortable writing with a guide. Some people find it helpful to use both hands, one to write, and the other to trail along and mark their place. Individuals with more vision may keep their non-dominant hand's index finger at the beginning of the line they are writing to help them track.

People with enough functional vision may not need writing guides. A ruler to keep handwriting straight or paper with bold lines are sufficient for these individuals. There are two common styles of bold, lined paper. One has very thick dark lines that are about 1 inch apart. This paper is designed for use with a bold pen. The other style has thinner lines that are a little closer together.

When a guide is not available, you can write a short note using a folding method like the one used for signatures. Fold your writing paper in small, 1- to 1.5-inch sections for the length of the paper. Each fold will act as a line on the page to write upon, making the folds whatever distance is comfortable to write within. When you unfold the paper, the creases will act as tactile guides for writing straight across the page.

Another common tool for reading and notetaking for people who are blind or have low vision is braille. Although braille will not be covered in this lesson, it is a useful tool for accessing print, identification, and communication.

You may have noticed that recreational reading is not included in this lesson. The Library of Congress Talking Book program and other audio and large print reading options will be covered in Lesson 17.

Summary

This lesson described methods and adaptive devices used to access print information and handwriting and simplify communication and print tasks for people who are blind or have low vision. Think about other senses and strategies you could use for some of these tasks. For example, you use your sense of touch when you write with a guide or identify mail.

You may wish to spend time decluttering and organizing before you implement financial management approaches from this lesson. What else could you simplify and utilize to make daily activities easier? Approach things from a problem-solving mindset to help with your adjustment to these new skills.

Suggested Activities

Try the following activities to gain a better understanding of the information

covered in this lesson:

- Identify which strategies you think will be most effective for sorting mail and reading documents. Try several of the suggested methods.
- Look into the services available at your bank that might simplify the task of paying bills.
- Practice writing with a variety of writing guides or create your templates.

Resources

To find items mentioned such as bold line paper, writing guides, and magnification devices, and the Talking Book program, visit the companies below:

- Library of Congress Talking Book program LS&S Products
- Independent Living Aids
- MaxiAids

Lesson 13: Techniques and Adaptations for Food Preparation

Introduction

Food preparation is not just about cooking. For some people, cooking connects them to family and friends. The foods people choose to eat and how much time and effort they spend in the kitchen varies drastically depending on preference, diet, and experience. Some people enjoy preparing meals for the family, both daily and on special occasions like Thanksgiving or birthdays. Others dislike cooking but still want to do basic tasks, such as making coffee or microwaving a meal.

Vision loss does not have to limit your independence in the kitchen. With the onset of vision impairment, some individuals feel hesitant to cook because they lack confidence or feel unsafe. This lesson is one of the longer lessons because there are so many different food-preparation tasks. You can skip to the next heading using the bookmarks if a section is not relevant to you.

Lesson Goals

- Learn to arrange the pantry and refrigerator for quick access
- Identify organizational strategies for ingredients, utensils, and cookware

- Perform everyday food-preparation tasks, including pouring, measuring, spreading, and slicing
- Learn how to use the stovetop and oven safely
- Adapt small appliances, such as a toaster, coffeemaker, mixer, blender, microwave, crockpot, indoor grill, and wok
- Learn to shop for groceries using assistance or low vision techniques and technology

Arranging the Pantry and Refrigerator

Several lessons in this series have provided tips on organization, and some of those strategies apply in the kitchen. See Lesson 9 for ideas on organizing and labeling. Organizing food items is essential for easy and efficient food preparation.

Identify an organization strategy that makes sense for the available storage space in your home. For example, you might want to separate and group similar items, such as canned vegetables, soups, and fruits. Organizing your pantry in this way may make it easier to locate items and lessen frustration.

Once things are grouped, review each grouping and identify which items could be easily confused. For example, a can of peas may look the same as a can of corn if the label is hard to read. One way to address this is to arrange canned goods in alphabetical order. Even if the cans are labeled with large print, braille, or tactile markings like rubber bands, it's faster to look for corn at the beginning of the alphabet than looking back and forth from one end of a shelf to the other. Also, pay attention to differences in size and shape and to distinguishing marks like pop-tops. When possible, purchase some items in cans and others in jars. The more unique characteristics, the easier it is to locate and identify objects on pantry shelves.

Many of the methods in Lesson 9 on labeling and identifying items also apply to food. Sometimes a simple marking system prevents the need for labels. For example, if you buy several kinds of soups, you could tear the label on one variety, put a rubber band around another, and leave one as is. You could also add sizeable tactile letters to certain cans.

If you have functional vision, some canned goods can be identified by color, graphics, or writing on their labels. Campbell's soups, for example, have a red and white label with large letters. Even with minimal vision, visual closure can help you identify a specific item; you may be able to see

that the name of a soup has several letters and begins with a large M or with a large T. If only mushroom and tomato soups are in the cupboard, these clues will help identify the correct one. Attaching large print or braille labels on index cards and systematic organization can also help save time.

If you use many spices and seasonings, it may help organize them on a spice rack. Some people prefer to sort alphabetically, and others sort by what gets used most often. Either way, having a consistent system will make it easier to locate ingredients. Consider transferring spices into jars the size of baby food jars, and store baking items like flour, sugar, baking soda, baking powder, and vanilla in containers with large openings. This technique makes it easier to measure ingredients. For example, it is often easier to scoop a teaspoon of cinnamon from a jar rather than trying to get a measuring spoon into a standard spice container with a narrow opening. This technique applies to liquids as well. Imagine how much easier it would be to dip a teaspoon into a jar to measure out vanilla rather than pouring it into a small measuring spoon and possibly overflowing it.

Organizing the refrigerator can be done in similar ways as organizing your pantry. Everything needs a designated place where it can be easily accessed. This may mean using drawers or shelves differently or using smaller containers inside the fridge to keep items together. Many fridges have drawers for meat, vegetables, and fruit, or another similar arrangement. This can be an effective way of organizing unless it is difficult for you to tell apart types of meat or fruit. In that case, try grouping items by what gets used together.

For example, if you often make sandwiches, you could group the ingredients for each sandwich type. So, the ham, cheese, lettuce, tomato, and condiments could be in a drawer or container together. Another example would be to have a drawer for your preferred salad ingredients. There's no one right way; the system you choose just needs to make sense and be easy to maintain.

The best organizational methods make it so that most items don't need a label. Buying items in containers with different shapes can also reduce the need for labeling. For example, buy milk in a plastic jug and orange juice in a carton.

The freezer presents unique issues. Many items are hard to identify when frozen because they feel similar. For example, think about trying to tell peas from corn or broccoli from chicken nuggets. Storing similarly shaped foods in different types of containers and on separate shelves can help limit

mix-ups.

Meat is also difficult to identify unless it is labeled or organized. If you buy chops and steaks simultaneously, one tip is to bag two chops together and the steaks individually. Similarly, put all chicken thighs in one bag and chicken breasts in another. If you can recognize colors, try labeling items with differently colored stick-on circles: purple for chops, orange for chicken, green for fish, and so on. Labeling items in the freezer can be tough; the items gather moisture, making adhesive labels slip off. Rubber bands become brittle in the cold and can break. Some solutions might include using baskets, different shelves, different shaped bag clips, or tags for a digital labeling system.

To identify consumable products, you might choose to use a digital labeling system that allows labels to be removed and reused. A simple way to do this is to attach labels with rubber bands. Digital labeling devices, like PenFriend or WayAround, can be used for all types of foods, including those stored in the refrigerator or freezer. Using one of these systems, you can record the product information onto labels and attach them to items. The PenFriend only has adhesive sticker labels. Some other labeling systems, like WayAround, provide a variety of labels, some of which may be better suited to the refrigerator or freezer. To identify items, place the device or a smartphone near the label, and the device will play your audio recording. Other digital systems read aloud bar codes on products to identify the package contents.

Organizing Ingredients and Tools

Previous lessons covered methods for organizing and using your other senses for efficient food preparation. Lesson 4 discussed how to use a tray to organize a workspace. This method keeps everything you need to be organized within reach, and it is very helpful when cooking. It works best to use a tray with a nonslip bottom or stabilized with a damp cloth or other nonslip material underneath. Place the mixing bowl, measuring spoons, and measuring cups on the tray. You can arrange ingredients around the outside of the tray in the order they appear in the recipe. This organization allows you to move quickly from one item to the next and lowers the chance of knocking something over. As you finish using an ingredient, you can put it away.

Trays help cut or chop too. Position a cutting board in the center of a tray and keep the knife against the tray's outside edge. Never lay a knife on the board or within the tray, where you might mistakenly grab the blade.

Using trays to organize tools and ingredients is useful for preparing a snack, a single dish, or an entire meal. The tray prevents spills on the counter and floor, and the organization ensures that ingredients only have to be identified once, during the set-up process. Position items based on preference and comfort but be consistent with the set-up and positioning of items to form muscle memory for tasks. Even when doing the most basic task, like making a sandwich or cooking leftovers, a tray will prevent messes and simplify clean-up.

Food Preparation Tasks

Many cooking tasks are challenging while adjusting to vision loss. However, with simple modifications, any activity can be done without relying on vision. This section provides adaptations for basic kitchen tasks, like pouring, measuring, spreading, and slicing. Most of the techniques involve one or more of the skills learned in Lesson 3. It may be helpful to review those before continuing with this lesson.

Pouring

Pouring is part of almost every recipe and is also part of daily activities. For example, many people start the day by pouring a glass of orange juice or a cup of coffee. It's not a good start to the day if the juice spills or the coffee overflows the mug. Regardless of whether they plan to cook, most people want the ability to pour a drink without frustrating mishaps.

People naturally develop adaptive methods when problem-solving. As long as the methods you develop are effective and safe, they can be used. This lesson will describe several common methods for pouring, which you can use depending on the situation and personal preferences.

One method for pouring cold liquids for yourself is the **finger method**. You can use this for pouring drinks that are not hot. After washing your hands, grasp a glass near the top. Crook your index finger over the edge of the glass, resting the second knuckle on the rim. Rest the spout of the bottle or pitcher on the edge of the glass opposite your index finger and begin to pour. When the liquid touches the tip of your index finger, stop pouring. The top of the beverage should be about an inch from the top of the glass. You can use the same technique for filling a glass of water from a tap or water dispenser. Practice this technique over a tray or sink in the beginning in case of spills. If it is difficult to feel the liquid on your finger or the glass overflows even after practice, you might want to use another method. The finger technique is not practical for people with neuropathy in their hands or if the liquid is at a temperature that is hard to detect.

Keep in mind that there will be differences as you pour, depending on the liquid. For example, carbonated drinks can overflow more quickly. It is helpful to pour these drinks slowly and add ice when the glass is partially full. These modifications will help keep the glass from overflowing.

Another pouring technique used is listening to the change in pitch as a glass fills up. This method may not work for people with a hearing deficit, and it is less reliable than other methods. As you start to fill a glass with any beverage that isn't fizzy, the sound of the liquid entering the glass will change from a low to a higher pitch. When the liquid gets within an inch or so of the top, the sound will become almost imperceptible. This clue is your signal to stop pouring.

Try this by filling a cup from the tap at the kitchen sink. Hold the glass under the tap and turn the cold water on to a slow but steady flow. Listen to the difference in sound as the glass fills. Just before it overflows, the sound may be undetectable. Practice several times to get a sense of the changing sound. It may be helpful to practice with different cups and bottles to determine which are easiest to hear. Once you are comfortable identifying the sound, try pouring from a carton or bottle into a glass over the sink. This method can be more challenging but can be used along with the finger method or another technique. Some individuals can also accurately estimate the fullness of a glass or mug by its weight.

Because it is not safe to use the finger method for hot liquids, you will need some other techniques. Like a Keurig or Hot Shot, some devices can be used to make a single cup of hot liquid, which removes the need to pour coffee or tea from a pot into a mug. If you use a traditional coffeemaker or tea kettle, three techniques may be helpful when pouring:

- Use the temperature on the outside of the cup as a clue.
- Develop a counting method.
- Use an electronic liquid-level indicator, available from organizations that sell products for blind or low vision individuals.

When you touch a cup full of a freshly poured hot beverage, you immediately notice that the outside of the cup is warm, or even hot. A transfer of heat occurs as the cup is filled. To use heat as an indicator, place your non-dominant hand around the upper part of the cup. When you sense the cup changing temperature, stop pouring. For safety, make sure the liquid is not hot enough to burn and possibly ask someone to watch you as you practice. It helps to start with hot water from a faucet and then

graduate to a cup of your favorite beverage when you feel confident.

The **counting technique** is rarely discussed but can be helpful. There are two tricks when using this technique. One is to count and pour at a steady speed, about a second hand's speed on a clock. The other is always to use the same size cup. Begin by having someone else pour as you count. When they stop pouring once the cup is full, you stop counting. Do this several times until you are stopping on the same number each time the cup is full. This technique lets you keep your hand on the cup handle and away from the hot liquid.

The last technique uses a small device called an **electronic liquid-level indicator (ELLI)**. The ELLI has two metal prongs that hang over the edge on the inside of a cup about an inch from the top. When the liquid reaches the prongs, the ELLI makes a buzzing sound, letting you know to stop pouring. The part of the device that hangs outside the cup holds a battery that powers the buzzer. This device also enables you to keep your hands away from the hot liquid.

Try using a combination of these techniques. For example, counting while listening to sound changes in a large coffee mug may work well. If you have functional vision, use high contrast by using a light-colored cup for dark-colored beverages or a light-colored glass when pouring soda or juice. Use vision when it's helpful, but also master some other techniques so you can pour safely when lighting is poor, or a contrasting cup is not available.

Note: None of the pouring techniques will work if you move your hand while pouring. Even a slight movement of your pouring hand can cause the beverage to pour onto the tray instead of into the cup. Make sure the spout or top of a bottle is over the cup as you pour. Hold the pitcher or jug and make contact with the cup's rim to ensure you are over the cup when pouring.

Measuring Liquid Ingredients

Many people use graduated measuring cups for dry ingredients and glass or plastic measuring cups with marks for liquids when cooking. These two tools are often called dry measuring cups and liquid measuring cups. However, this is not the best approach for people who are blind or have low vision. One cup is the same amount, no matter which tool is used. When following a recipe, graduated measuring cups are easier to use for both liquid and dry ingredients. They are also easier for people with low vision to see. Graduated measuring cups can be purchased in light and dark sets. They most often contain one cup, a half cup, a third cup, and a fourth cup;

some sets include additional measurements. They can be differentiated by a tactile memory of the size, or you can buy a set with large print or tactile marks.

These cups help scoop ingredients in the correct amounts or to pour using the finger method. When using the finger method, remember that it's easier to feel cold liquid than room temperature liquids, especially oils, so refrigerate liquids when possible. Also, there will be less to clean up if you set your measuring cups on a tray or small plate when filling them. If a hot liquid measurement is required, it is safest to measure the liquid when it is cold and then heat it in the microwave.

When measuring small amounts of liquid, it can be easier to scoop liquid into a measuring spoon rather than pour the correct amount. Some people who are blind or have low vision use measuring spoons shaped like ladles for dipping liquid ingredients. If you cannot find this type of measuring spoon, the handles of regular metal spoons can be bent to create ladles. To use a ladle-shaped measuring spoon or cup, pour or store the liquid in a wide-mouth container. Dip the ladle into the liquid and lift it out. A large eyedropper or child's medication syringe can also be used to suck up a teaspoon of vanilla or other liquid ingredients.

You may not need to mark sizes on graduated measuring cups and spoons; storing them nested together will help you determine their measurements. If you want to label them, metal handles can be notched with a file or ice pick, and plastic handles can be marked with glue, puff paint, or a tactile substance purchased from a specialty company. Specialty companies also sell premarked, tactile, or large print measuring cups and spoons. To make the best use of contrast, consider purchasing measuring cup/spoon sets in both white and black.

Measuring Dry Ingredients

People who are blind or have low vision usually need only a few adaptations to measure dry ingredients. Some accomplish this task by dipping a measuring cup into flour or sugar or filling the cup a little at a time with a spoon and then leveling off the top with a knife. To avoid spilling a measured ingredient onto the tray, put the ingredient canisters, jars, or other containers close to the mixing bowl. Rest the wrist of your dominant hand with the measuring cup lightly on the edge of a bowl. Before emptying the measuring cup contents, use your non-dominant hand to verify that the cup is over the bowl. Sometimes people accidentally pour flour or sugar onto the tray because they missed the mixing bowl's edge. Use a bowl that

contrasts against the tray to avoid missing it. Do not measure over the mixing bowl, as you may end up with excess ingredients. Using contrasting measuring cups may also help.

Spreading

Spreading butter, cream cheese, and condiments on bread, crackers, or bagels is a daily task for some people. This is typically done visually, so you will need to make modifications to this task. When doing this activity non-visually, spreading involves muscle memory and tactile awareness.

It's easiest to practice this skill on a piece of toast because it is a larger surface than a cracker and firmer than untoasted bread. Notice that the blade of a table knife is about the same length as the width of a standard piece of toast. Start without anything on the bread to get comfortable with the pattern. Put the point of the knife at the top corner of the toast. Drag the knife across the toast in a spreading motion, left to right or right to left. Do this until you can move the knife across the toast with ease. Now try the same spreading movement starting at the top of the toast and moving down toward the bottom. Once comfortable with the pattern, try spreading something easy, like peanut butter or jelly, on toast using the motions you've practiced. Check to see if any peanut butter or jelly got on the edges of the toast tactily or using vision.

Some people who are blind or have low vision use a technique that involves putting the ingredient in the center of the bread using a spoon. Then, either using the back of the spoon or the butter knife's blade, spread outward in all directions. You may want to try this technique as well. Once you feel confident using one of these techniques, make a sandwich using toast or bread and your favorite condiments.

When spreading something on a cracker or bagel, it may be easier to use a spoon than a knife. Put a dab of the ingredient in the center of a cracker and press lightly with the back of the spoon to spread it. The same technique works on a bagel or muffin. Expand this technique when spreading chicken salad or other chunky sandwich food. Put several dollops in various places on the bread, and then flatten them with the back of the spoon.

Slicing and Dicing

Many people can't imagine cutting fruits, vegetables, or meats with limited or no vision. Safety precautions must be taken seriously while using a knife, but people who are blind or have low vision are no less safe than

people with sight. Many people who are blind are safe and proficient when using a knife.

This section discusses modified cutting techniques that are effective for people who are blind or have low vision. If you have additional conditions, like neuropathy, tremors, severe arthritis, or other physical limitations, other cutting methods may be more appropriate for you.

Let's start by reviewing some of the safety tips covered in earlier lessons:

- Find consistent locations and orientations for organizing knives in the workspace. For example, don't lay a knife on a cutting board. Always place the knife along the tray's outside edge with the blade facing the tray so your dominant hand can grasp the handle safely. Arrange the food to be cut around the other two sides of the tray or in a basket or large bowl.
- If you have low vision, use a cutting board that provides color contrast to most foods. You can also use a clear cutting board and put a color-contrasting cloth between the cutting board and tray.
- Never lay knives in a sink with other dirty dishes. Place them behind the faucet with the blades pointing toward the wall or stand them blade down in a tall glass or another receptacle. Wash, dry, and put them away immediately. Store knives used for cooking in a knife rack or make protective sheaths from old paper towel rolls.
- Never touch the blade of a knife to determine which way to hold it. The shape of the handle on many knives provides the clues you need. Some handles have notches on the underside for fingers, and others have a safety guard next to the blade. Very few knives have handles with no difference between the top and bottom sides. If you have a knife with a handle that isn't easy to orient correctly, place a small piece of tape, puff-paint indicator, or notch on the top of the handle.

If you are concerned about cutting yourself, try a knife called a lettuce knife. It's a serrated plastic knife that effectively cuts lettuce, some vegetables, and baked goods and is duller than a metal knife. If you use knives you've been using for years, don't use a dull one because it can slip when you press down hard. At times you may need to use a combination of knives. For example, you may find it easier to cut an apple in half with a chef's knife and then use a serrated paring knife to make slices.

Begin slicing practice with a paring or steak knife and food that can be easily chopped, like a banana or celery. Hold the food with your non-

dominant hand, slightly further from the knife blade than you might have in the past. Put the knife blade against the end of the food and begin to slice just as you always have. Your muscle memory will take over. Move your non-dominant hand away from the knife as you slice. When there is a small amount left, you might need to switch to another technique, like the tunnel method described below. Evaluate the slices. How many are similar in size? You will get more consistent as you practice. Maintaining constant contact between the knife blade and the cutting board will ensure you don't accidentally cut your fingers.

With larger foods, try a different technique. Curl the fingers of your non-dominant hand and rest them on the top of the food. Press down and stabilize the food by placing your thumb along its side but behind your other fingers. The knife rests against your knuckles at a slight angle to prevent cutting your knuckles as you slice. Move your hand out of the way as you continue to slice the item.

The **tunnel method** can also be used to slice food safely. Hold the item with your non-dominant hand, with the thumb on one side and the fingers on the other. The space between your thumb and fingers makes a tunnel in which to cut. Depending on the food's size, all your fingers may be holding on or just the first finger or two. Either way, make sure your fingers stay out of the way by keeping them right next to one another or curled into your palm. Put the knife on top of the food inside the tunnel created by your hand. This method can be used with many items and works well when slicing boiled eggs or other round foods.

For large vegetables, like cabbage or lettuce, or meats, like ham or roast, you might like a knife called the Magna Wonder Knife. It has a long blade similar to a serrated bread knife. The knife is attached to an adjustable guide that can create very thin slices or slices about half an inch thick. You can set the knife blade on top of a ham and align the guide with the side of the ham. You slice downward as you apply pressure on the guide. The result is a perfect slice. These knives can be purchased through specialty companies.

If you have low vision, you can cut and slice more efficiently by adjusting the contrast or lighting used for the task. To slice a vegetable, cut into it, take three or four slices, and then cut them in one direction in half or thirds. Rotate the smaller slices and cut them in a perpendicular direction to create cubes. Repeat until the entire vegetable is diced.

You can use your tactile sense to determine if a potato, carrot, apple, or

other item is completely peeled. Try peeling the item under running water, or frequently rinse it and use your fingers to detect any remaining peel. Use overlapping strokes when peeling to make sure you cover the entire area.

If you have medical issues that make it unsafe to slice food items or prefer not to use knives, consider food choppers and food processors. These devices can slice, dice, mince, and more. Another alternative is to purchase items already prepared. Produce departments of most large grocery stores carry prepackaged sliced, diced, and shredded fresh fruits and vegetables. Some frozen and canned foods have options of whole, sliced, or diced.

Using the Stove and Oven

This section will address stovetop and oven safety, centering pans on the stovetop, turning foods in a skillet, testing food for doneness, identifying boiling water, and timing cooking using adapted timers and other devices. You should not try these techniques on your own while you are learning. If possible, contact an agency that serves people who are blind or have low vision to work with you on the following stove techniques. If a professional is not available, ask a friend or family member to observe your practice until you are confident and feel safe with your skills.

Stovetop Safety

Lesson 5 recommended using a lower protective technique when approaching a stove to avoid bumping into it. This habit will always keep your hands below your waist and the stovetop, protecting your hands from a hot burner or from knocking a pan off the stovetop.

The first safety tip is never to leave anything on the stovetop. It's not uncommon for people to leave small utensils or other items on the stove between the burners. However, this is not a safe habit, even for people without vision loss. Also, never leave anything flammable on the countertop near the stove, like oven mitts, dish towels, or paper products. Anything left on the stovetop or near the stove is an invitation for an accident. After cooking, remove pots and pans as soon as they are cool enough to wash. This helps keep the stove clear.

The following steps can be used when approaching a stove to determine if it is on or if items were left behind:

- Always approach the stove with the backs of your hands below your waist.
- Begin with your dominant hand and raise it even with the front edge of the vent-hood or bottom of the cabinet above the stove. This places

your hand over the front burner, and it will be high enough that you won't knock something off a burner or come in contact with a hot burner.

- With your palm down, slowly lower your hand until you contact something on the burner, feel heat, or discover the burner is safe.
- Repeat this procedure for the back burner by raising your hand again, toward the back of the stove.
- Repeat the entire process over the other burners.
- Always clear the stove before you begin cooking. Along with pots and pans left on the stove, check for items like paper towels or plastic lids. It is especially important for individuals who live with other people because sighted family members might leave stray items behind.

Centering Pots and Pans

Cookware can be centered in different ways depending on the type of stovetop. Before you start cooking, it's important to center your pot or pan on the burner before turning it on because it is easier to make adjustments when cookware is cold. When possible, use your functional vision to verify that the pan and burner edges are aligned. It may help to use brightly colored electrical tape to mark the cooking surface's outer edges on a glass-top stove (be sure to put the tape far enough away from the burner). Once the stove is on, hold the cookware's handle before doing anything with the food to avoid knocking it off-center.

Despite holding cookware in place, sometimes a pan gets moved off-center. When this occurs on an electric stove with coils, you can use a heat-resistant spatula or wooden spoon to circle a pan to feel the burner and realign it. On a gas stove, use a metal spatula with a plastic handle to push the pan back to the center of the grate.

Glass-top stoves can be more difficult to center things on once the stove is hot. High-contrast electrical tape outside the edges of burners can be a visual clue, but people with limited or no vision need tactile methods. One method uses a heat-resistant utensil with the same width as the space between the edge of the burner and the stove's edge to measure where the cookware should go. For example, when cooking on the front right burner, the distance between the right side of the stove and the burner could be adjusted first, and then the utensil is used to measure from the front edge of the stove. Practice this method first when the stove is cold, and always use the same utensil to determine distance. Whichever method you use, it is recommended to lower the temperature when recentering a pan on a hot

stove.

Be extremely cautious about the handles of pots and frying pans. If possible, angle the handles, so they do not stick out beyond the edge of the stove, where they are easily bumped. To avoid bumping a handle and knocking a pot off-center, hold the handle of a long wooden spoon, and slowly trail the edge of the stove to locate any handles sticking out. You could also trail the edge of the stove with the back of your hand until your arm touches a handle. Although this modification is safe, it puts your hand near the heat source.

Turning Foods in a Skillet

Slight modifications in cookware, utensils, and methods can make a big difference when learning to cook with a visual impairment. It is a good idea to use the right size pan for what is being cooked and limit the number of items in a skillet. For example, when making grilled cheese sandwiches, it would be easiest to cook one at a time in a smaller skillet than to manage a large skillet with multiple items. If you are frying burgers and have a large skillet, you may be used to managing four at a time, but two will give you more space for turning. When cooking smaller items, limit the number and arrange their positions to make it easier to manage. For example, for foods like sausage patties or potato slices, it may help to arrange pieces at the twelve, three, six, and nine o'clock positions and then another piece between each. Leave the center of the skillet for turning space and rotate the food toward the skillet center when flipping.

When learning adaptive techniques, begin by cooking just one item. Put the food in the center of a small skillet. It may help to use the handle as a landmark when you are locating an item in the center of a pan. This is done by lining up the spatula with the pan's handle to identify the center by following the line of the handle. Slide a spatula under the food and rotate your wrist to turn it over and recenter it. Using a large spatula or a double spatula may make flipping food easier. A double spatula can be purchased from a specialty company and is composed of two spatulas attached at the base of the handles. A double spatula is great for turning sandwiches, meats, and sliced vegetables because you can slide the bottom spatula under the item and clamp down with the top spatula before rotating your wrist. Unfortunately, these don't work with pancakes, eggs, or other delicate foods.

Recall the tips in previous lessons for maximizing functional vision. Make sure lighting near the stove is sufficient without causing glare. Use color-

contrasting utensils and cookware, and be aware that some cookware will create glare. For safety, always use nonvisual adaptations instead of getting closer to the stove to see better.

Identifying Boiling Water

When a visual impairment makes it difficult or impossible to see the bubbles when water comes to a boil, this task requires the senses of hearing and touch. Start by boiling water for practice. Pay attention to how the sound changes as the water simmers, comes to a boil, and then reaches a rolling boil. The sound of boiling water will become distinctive after practice. Depending on the cookware, you may hear the sound of a rattling lid, another auditory cue. Some vibrations can be felt through the handle of a pan when water is boiling. The vibrations start with a mild vibration and then increase. Feeling the vibrations is an additional cue; it may be the only cue for people with a hearing impairment.

Water is usually boiled for adding ingredients like pasta or rice. This can be done using a combination of functional vision and other senses. However, if you can't rely on vision, use hand-to-hand coordination to pour the ingredients into the boiling water. This can be done by holding a spoon with your non-dominant hand in the center of the pot and bringing the ingredients in contact with the spoon handle to pour them into the pot. Stir if necessary before removing the spoon.

Oven Safety and Cooking

Here are some tips for oven safety:

- Always approach the oven door with the backs of your hands down below the level of the stovetop.
- Hold one hand near the surface of the door to check for heat. If you feel heat, put on oven mitts or an Ove Glove and wear them to complete the remaining safety steps. Always protect your hands and arms when the oven is warm or hot.
- Step to one side and open the door entirely, so it doesn't spring back up.
- Systematically scan the surface of each oven rack tactilely and remove anything left inside. It's safest never to store pans in the oven, so check to make sure it's clear before proceeding.
- Check the position of the oven racks and adjust accordingly. It can be helpful to keep only one rack in the oven. One rack in the oven will prevent you from accidentally pulling out the wrong rack and burning yourself or knocking something into the bottom of the oven. The rack's

default position can be in the middle of the oven, where most food is baked.

- Stand to the side of the door opposite your dominant hand, if possible. This position helps you avoid steam burns when you open and close the door. It also leaves your dominant hand free to pull out the rack and put food inside the oven. Once the door is open, use either the back of your gloved hand or a tool called a Rack Jack to locate the rack safely. A Rack Jack has a long wooden handle with a hook and notch on one end. It lets you remove and return a rack to the oven without your hands touching the rack. To locate a rack, put the end of the Rack, Jack just inside the oven, and trail down the inside wall until it touches the rack. Hook the Rack Jack over the front of the rack and pull it out. Push the rack back inside the oven with the notch. As you bend over to close the door, use the upper protective technique to protect your head.

Centering Baking Dishes in the Oven

It can be challenging to center pans in the oven without relying on vision. One helpful tip is to mark the oven's center with a tactile label just above the oven door. You can use the mark to locate the midpoint and center baking dishes on the rack. Practice centering bakeware of different sizes and weights while the oven is cold. Once you feel comfortable with the skill, set the oven at a low temperature for more practice. Finally, try baking a pizza or something else that isn't heavy or awkward to move in and out of the oven.

Setting Stove and Oven Temperatures

It can be challenging to set the stove's temperature or oven if you cannot read the numbers. Depending on the type of controls and the colors, this task is more difficult on some appliances than others. Adaptive methods and markings can help simplify this task.

If the stovetop controls are dials, as on most gas or electric ranges, picture a clock face. Most stovetop burners, gas, and electric are turned off when the dial is pointed at 12:00. The other settings will vary depending on the appliance, so ask someone to help you identify each setting for you. A common layout on an electric stove turns the dials to the right to set to a high temperature at the two o'clock position. Medium-high is positioned at four o'clock, medium at six o'clock, medium-low at eight o'clock, and low at ten o'clock. This may be different on your stove, or the dials might turn both to the right and left, depending on the burner size desired. Familiarize

yourself with all the settings and remember or mark the ones you use most often.

The dials on a gas stove may operate differently and often turn counterclockwise. The first setting is to light the burner, and then the high setting may be located at the ten o'clock position, with the lower temperature settings descending around the clock face. Some newer gas stove dials do not turn beyond the 3:00 position. When lighting a burner, remember to listen for clicking and then a swish, indicating the flame is lit.

Think about whether it would be helpful for you to mark the dials on your stove. Some people who cook often can easily recall the temperature settings. But, most people find it helpful to mark at least one or two temperatures. A tactile bump dot or a color-contrasting dot can be placed at the position or setting you use often. A thin line of electrical tape can also be used as a marking.

Most ovens have digital touchpads for setting temperature. If your oven uses a touchpad, mark it with bump dots or label the basic settings with large print or tactile letters and symbols. For example, you can use a B for bake, S for start, O for off, C for cancel, an up arrow to increase temperature, and a down arrow to decrease temperature. Unless you live alone, use clear or transparent tactile labels so sighted people who also use the oven can see the touchpad. If your oven has dials, mark the temperatures you use often.

Some updated kitchen appliances connect wirelessly to a smartphone app and are controlled remotely. This can be a great option for someone who is blind or has low vision to access the app. Ovens with screen reader-accessible apps can be set and monitored without needing to mark the settings on the appliance itself.

Note: Touchpads now come in 2 types, resistive and capacitive. The resistive touchpads require pressure to activate the controls while capacitive touchpads do not. On a capacitive touch appliance, simply feeling around for a bump dot will likely activate one or more settings. The capacitive touch controls are more difficult to mark. Consider placing raised bumps around the outside of the touchpad, just to the left, right, above, or below where the control is that you want to mark. Move your finger around the edge to find the mark and then toward the center of the touchpad to activate the control.

Testing Food for Doneness

Recipes often instruct cooks to use visual cues to determine doneness, like

watching for bubbles to burst or baking until a cake browns. These cues may not work for a person who is blind or has low vision. However, other methods can work. The following three techniques are particularly helpful:

- Peak smell
- Tactile or auditory monitoring
- Using a timer

Peak smell refers to the smell of food when it's done. As food cooks, it releases aromas. The smell changes as food cooks and many foods have a distinctive peak smell. If food cooks too long, it will smell burned.

Many tactile clues can be used to help recognize when a food item is done. Think about the methods you used before and how they can be modified. For example, a cake is finished when a toothpick inserted into the middle comes out clean, not sticky. Stickiness is usually identified visually but can also be done tactilely: Pull out the toothpick and feel for sticky crumbs. A cooked piece of fish will separate into flakes when tested with a fork. A burger that is done will feel firm when tapped with a spatula and will have a different consistency when cut into, based on how well done it is.

The auditory sense helps recognize doneness with foods that sizzle as they cook. That sound usually diminishes when the food is close to being done.

The most reliable method of detecting doneness is using a timer. Many cooks use the timers on their stove, microwave, or smartphone. Most recipes give an approximate time for cooking a dish. Every appliance is slightly different, so you may need to rely on the methods described above until a recipe is familiar. For example, a cookie recipe may give a cooking time of 10 minutes, but the peak smell time may turn out to be 8 minutes in your oven.

Foods you have prepared often over the years without following a recipe may cause you the most concern. These are the foods you knew were done by how they looked. A grilled ham and cheese sandwich, pancakes, fried eggs, and steamed vegetables fall into this category. It may take time to establish cooking times for commonly prepared items, but don't be afraid to experiment. For example, if you like a fried egg in the morning, fry an egg and test it when you think it's done, noting how long you cooked it. If it's overdone, reduce the time the next day. Continue until you've established a cooking time that results in an egg you like. Experiment with several untimed favorite foods. You can also have someone visually monitor the food while a timer is running and note the time it took to cook. It

may help make a list (large print, braille, or audio) of cooking temperatures and times for foods you like to make often. A talking food thermometer is another adaptation, especially for meats, but you need to know the ideal safe cooking temperature for each type of meat.

In addition to microwave and oven timers, there are many other timer options. Smartphones and smart home devices, such as an Echo Dot, use a voice command timer. You can also check specialty companies for talking, large print, and tactile timers.

Adapting Recipes

There are many ways to make recipes accessible. Some methods were mentioned in previous lessons, like using a digital recorder, computer, or large print to record recipes. It can also help make sure each recipe is organized and includes your tips and notes.

When recording a recipe, list all ingredients first, in the order they are added. This will help you organize your workspace when it's time to cook. Add the needed amount of each ingredient to the recipe's directions. This eliminates the need to refer back to the list of ingredients repeatedly.

If you have low vision and use a computer or tablet, you could create a folder for recipes with a file for each recipe or category. Organize each file in a way that makes sense, possibly in alphabetical order or most frequently used. Choose a font that's easy for you to read and try using a bold type style; play with the font size until you find the right one.

You could also use a marker or felt tip pen to copy recipes. Print is usually easier to read than cursive. Try writing one step per line instead of using a paragraph format, and skip lines if it helps with reading. The recipes can be placed in a three-ring binder, organized by categories. Many visually impaired cooks also find it helpful to use plastic sheeting over the pages to protect them when you turn pages with messy hands.

Suppose you cannot read print or braille. In that case, you will need to record your recipes using auditory methods, like a screen reader on a smartphone or computer, a smart audio device, a digital recorder, or an auditory labeling system. Digital recorders are available from specialty companies. Choose one with voice guidance that speaks to you as you navigate its functions. Some recorders offer folders for organization so that you could use one folder for recipes. A PenFriend label might be attached to your recipe card and the recipe recorded on that label.

You can search the internet using assistive technology to find new recipes.

Also, try asking friends and family to share their favorite recipes. If you have a system in place for organizing your recipes, you can ask people to provide them using your format of choice. Cookbooks in audio format can also be acquired from the Talking Book Library.

Adapting Small Appliances

Small kitchen appliances, like a toaster, coffeemaker, mixer, blender, microwave, crockpot, countertop grill, or toaster oven, are used often and are sometimes more accessible than a stove or oven. Some small appliances may need to be marked or labeled to be usable, while others are workable as they are.

Examine your small appliances to identify which are difficult to use or need adapting. Some models of the Keurig beverage maker, for example, have two sets of buttons that are easy to locate and identify without labels. The larger button of one set turns the machine on and off. The other set gives you three choices, from left to right: 6, 8, or 10 ounces of your favorite beverage.

Based on the information in Lesson 9, decide what types of labels, if any, your appliances need. For example, most blenders and mixers have several settings. A small bump dot or drop of glue or puff paint on the settings you use most often might work well. A crockpot may need the off and high settings labeled to make it accessible.

If marking an appliance does not make it accessible, consider other options. For example, many people who are blind or have low vision switch from a traditional coffee maker with many settings to a simple one-cup device with fewer buttons and is easier to pour. Another method to try is creating a notecard with written information about each setting for devices you use.

Some people who are blind or have low vision buy talking microwaves or smart microwaves connected to an app on a smartphone or tablet. These can be good options and simplify tasks but may be more expensive than a standard microwave. You could also look for a microwave with a dial to set the cooking time, making it easier to set.

If you use a microwave with a touch panel, you will probably need to do some marking or labeling. Try to only mark buttons you often use and use distinctive markings for each button. For example, if you only use the microwave to reheat food, you may only need to mark the quick-start or one-minute button and the cancel button.

If you use your microwave often, you'll need many more markings. One way to mark the number panel is to put a line of color-contrasting electrical tape between each line of numbers. Since there is not a lot of space, cut the strip of tape in half. Put a line between 1-2-3 and 4-5-6 and another line between 7-8-9 and 0. Don't make the lines any longer than the space of the numbers. You'll press just above the beginning of the top line for one and just below it for 4. Press the center for 2 and 5 and the end of the line for 3 and 6.

This arrangement lets you use color-contrast and tactile markings while keeping the numbers visible for users with sight. Use a different material to label the Start and Cancel buttons. If you put labels directly on the numbers, use locator dots or translucent stick-on labels, but try to limit them to the odd numbers plus zero. Some people mark the 5 as a center point and use that as a landmark to locate the other numbers. And, the next time you buy a microwave, find the simplest one that will be easy to adapt.

Cooking Without the Stove

Although people who are blind or have low vision can use a stove or oven as safely as anyone else, some prefer to use other appliances for cooking, like a crockpot, electric wok, countertop grill, toaster oven, or microwave. Some benefits to using these small appliances are:

- Fewer settings
- Easier to clean
- Less bending over or lifting heavy pans from the oven
- Less heat, which keeps the kitchen cooler
- Use of less electricity
- Easily positioned in an accessible area

Each small appliance offers advantages. A crockpot can be turned on in the morning for a busy person, and the food will be ready for dinner. Because you preset the timer on a crockpot or slow cooker, it is difficult to overcook a meal accidentally. Crockpots are large enough to cook a batch that serves six or more people or provides six meals for one. Its versatility lets you cook almost anything, from vegetable soup to a roast with vegetables. Some slow cookers offer multiple methods of cooking for more variety.

A toaster oven gives you the same baking and broiling options as an oven but can be spatially easier and safer to manage. You should follow oven-safety guidelines while operating a toaster oven.

An electric wok's shape and even temperature make it great for quickly cooking various meals, including meats, healthy, crisp vegetables for an Asian dish, or just about anything else. A wok's curved sides make it virtually impossible to accidentally push food out of the wok, no matter how vigorously you stir.

Another popular appliance used as an alternative to a stove is a countertop, indoor grill that simultaneously cooks on both sides. The George Foreman is probably the best-known model, but there are others available. It's a safe approach to grilling because you never have to turn the food over. It is quite simple to center food on its small area, and food only needs to be centered once. It also cuts down on cooking time by cooking both sides at once.

If you only use your microwave for heating leftovers or water, consider that most things cooked on a stove can be cooked in a microwave. Find some recipes and get started. A microwave's benefits are that it emits very little residual heat, it uses modest amounts of electricity, and you run less of a risk of burning yourself than you do cooking over a stove.

Shopping for Groceries

Vision loss can make it challenging to shop for groceries independently. Fortunately, there are many adaptations and alternate methods that can help the process run more smoothly.

If you have good functional vision, you may be able to get around a store with little or no help. You can use tools like a handheld magnifier or portable digital magnifier to read labels and a monocular for reading signs over the aisles.

Other individuals who are blind or have low vision may need to ask customer service to help find items or get around the store. Although they are required by law to help at any time, you will receive better service when the store isn't busy or crowded. Even if you can shop alone, it might be faster to shop with someone from customer service who knows the store's layout.

If you were used to shopping at a wide variety of stores, you might find it confining to limit yourself to one or two stores. However, transportation to some stores may be unavailable, costly, or time-consuming, especially if you use public transit or paratransit. An advantage of shopping at the same store is familiarity with personnel and store layout. The quality of service is often equal to how well the staff knows you. Some customer service staff are better at helping someone who is visually impaired than others. If you

know who is better, you can ask for those individuals. Remember, the friendlier you are, the better the service.

Preparing a grocery list should be an ongoing task. Find a way to keep track of the items you need. As you use an item, set the label aside, or write the item on a list on the refrigerator. If you are familiar with the store's layout, you can make your list to match the layout. People are more willing to help if they aren't running back and forth across the store. If you know where many of the items are located (for example, your coffee brand is in the center of aisle six on the right), you can help your assistant find some items.

Along with your grocery list, take along labels of items you buy often and put them on the products as you place them in your shopping cart. This saves time when you get home and prevents mix-ups. Another advantage of knowing store personnel is they can help in tearing labels or marking two similar package items.

If you plan to use public transportation or paratransit services to reach a store, find out ahead of time the policy for the number of bags you can take on the bus. You probably won't be allowed to have eight or ten bags. Consider buying a small cart on wheels that can hold many groceries and functions like one parcel. A small cart can make it easier to take groceries home. If public transportation is not available, ask about volunteer services at senior centers, churches, or other nonprofit organizations. If you are shopping with a friend, family member, or neighbor, ask for help from customer service so both you and your companion can shop at the same time.

Some people prefer to use services that make grocery shopping independently unnecessary, like grocery delivery services, meal delivery services, and stores with grocery pickup options. These can be good options for people who have transportation barriers, don't like to shop, or don't have the time. Services like Amazon (available only in certain markets) will even deliver the groceries and put them in the refrigerator for you.

Summary

This lesson covered many skills and adaptations for the kitchen, from basic tasks like pouring a drink to more complex tasks like cooking on a stovetop. Whatever your level of vision loss and interest in food preparation, there are adaptive techniques to make your daily cooking tasks easier. Hopefully,

these suggestions and techniques will give you the desire and courage to get back into the kitchen. Bon appetite!

Suggested Activities

Try these activities to start using the skills taught in this lesson:

- Start decluttering and organizing the kitchen, one area at a time.
- Practice using different pouring methods using water. Do it over the sink to prevent spills.
- Identify which kitchen appliances will be useful to you, and get help marking any that have unreadable buttons or settings.

Resources

Visit the following websites to find adaptive cooking aids such as talking timers, liquid level indicators, the lettuce knife, high contrast cutting boards, and more:

- [Blind Mice Mart](#)
- [Independent Living Aids](#)
- [LS&S Products](#)
- [MaxiAids](#)

Lesson 14: Managing Everyday Housekeeping Tasks

Introduction

Most people do cleaning and home-maintenance tasks daily, ranging from daily activities like doing the dishes to less frequent activities like changing a light bulb or air filter. Consider the tasks you did around the house independently before vision loss. Have you found adaptations for any of those tasks? Do some cleaning tasks seem impossible without good vision? Managing household tasks may seem overwhelming for people who are newly visually impaired. However, the adaptations for successfully performing most of these tasks are simple and based on principles you are already familiar with, like using other senses, organization, and overdoing the job.

Do you have difficulty telling if the kitchen counter or sink needs cleaning? Do you wonder if the floors are thoroughly swept? If you have questions

about managing your home, you will find this lesson helpful and encouraging. The skills needed to do each of these tasks are found in the Toolbox you learned about in Lesson 3. This lesson describes how to use nonvisual techniques and any remaining vision to complete homecare tasks successfully.

Perhaps you have found you don't want to do some home-maintenance tasks anymore or have hired housekeeping assistance. That's a choice many people consider. This lesson will provide the tools and information you need to do any tasks you prefer to complete independently or when a housekeeper or handyman is unavailable.

Lesson Goals

- Learn to clean small, horizontal, and vertical surfaces without using vision
- Be able to sweep and mop floors using appliances and furniture as landmarks
- Know how to make a bed using the mattress, box springs, and head- and footboards to center the linens
- Know how to plug appliances safely into electrical outlets
- Be able to change lightbulbs safely in table lamps
- Be able to operate large appliances, including the microwave, stove, dishwasher, washer, and dryer by labeling strategic dial positions

Cleaning Horizontal Surfaces

Think about all the small, flat surfaces in your home. For example, visualize the kitchen. There may be countertops, glass-top stoves, tops of small appliances, and a kitchen table. Think about other rooms in your house. Most furniture has at least one flat horizontal surface that needs to be cleaned.

Most people learn to clean with mainly visual approaches, but these strategies are not effective for people who are blind or have low vision. Even if an individual has some usable vision, they may not feel confident in how effectively they can clean using their vision. Adaptive methods for basic cleaning require skills learned in previous lessons, including the sense of touch, the grid pattern, overlapping movements, and body-sized space.

You can use your sense of touch to tell where a surface is dusty, sticky, or unclean. You can also use it after cleaning to make sure nothing was

missed. It's important to note that some health conditions decrease sensitivity in one's fingers and feet. People with neuropathy or decreased sensitivity may not find it helpful to use touch to determine cleanliness. In these cases, a person can clean an area thoroughly and skip checking their work.

Body-sized space refers to an area about the width of your body that you can easily reach without moving your feet when cleaning. If you are blind or have low vision, break up large areas that need to be cleaned into body-size spaces that you tackle one at a time to ensure every section gets cleaned.

The grid pattern and overlapping movements go together. Divide a body-sized space into several small grids. Making overlapping circular movements, clean first in one direction (left to right) and then clean the same area in the opposite direction. A long counter, large table, or floor can be divided into several body-sized spaces. Landmarks like appliances, furniture, drawers, and cabinet doors can help break up the surface into sections as well.

Before cleaning a table or counter, it's strongly recommended that all items be removed from the surface. Taking this precaution can prevent knocking over a glass or breaking a dish. This precaution is recommended for people with all vision levels because lack of contrast, glare, or limited peripheral vision can cause items to be overlooked.

You can locate items using the manual searching method discussed in a previous lesson. To search a countertop, make a loose fist and put it on the counter's front edge. Move your hand slowly in a front-to-back pattern. When you come in contact with something on the counter, remove it to a safe location. Continue in the same direction until you reach the back of the counter and have removed everything. Repeat this pattern using overlapping movements until you've cleared the entire area. Now it is safe to clean the counter.

The wall at the back of a counter acts as a buffer that prevents you from knocking things off the counter and onto the floor. When you are cleaning a table, you must modify this technique because there is no buffer. For small tables, put your free hand at one edge of the table to serve as a buffer. Move your other hand in a loose fist toward your buffer hand, searching for things on the table. Repeat this pattern until you've searched the entire table. A large table may need to be divided in half. The center of the table can serve as the buffer. Begin on one side and move your loose fist toward

the center. Then begin on the other side of the table and move toward the center, removing any items you find.

An adaptive method you can use when you start to clean is to spray the cleaning product onto the cloth rather than directly on the surface of what you're cleaning. This method lets you control the amount and direction of the cleaner. Begin cleaning in one corner and, using a grid pattern, move from left to right or right to left. Repeat the pattern, making certain the cleaning cloth overlaps on each pass.

Cleaning Vertical Surfaces

Adaptive methods for cleaning vertical surfaces, like mirrors, windows, or glass doors, are similar to horizontal surfaces. Use a grid pattern to divide a surface into small sections, use overlapping movements in alternating directions, and spray the cloth instead of the mirror or door's surface. Mirrors can be divided into two sections. This technique can be done by starting in the upper left or right corner. Clean halfway across the mirror and then begin in the opposite corner and clean the other half, overlapping in the center to ensure the entire mirror is clean. You can use your non-dominant hand to mark the place that is being cleaned as a guide. Some people prefer to use items, such as the cleaning-product bottle, to mark the sectioned-off area's edge.

Sweeping and Mopping

Cleaning floors can be done with some simple adaptations. Instead of spot cleaning based on a visual scan of where a floor is dirty, you'll need to clean the entire area systematically. You can do this similar to how you clean a table or other surface. Divide the floor into body-sized spaces, using landmarks like the refrigerator, stove, sink, table, mop bucket, or cleaning-product bottle. Each section should be about the distance your arms can reach easily with a mop or broom. When cleaning a table, use overlapping movements in a grid pattern to thoroughly clean the floor. The main difference is that the overlapping movements will be the broom's width rather than the hand's width.

For example, if your dishwasher, sink, and a corner cabinet are side-by-side along one wall of the kitchen, you would begin by sweeping just in front of your feet toward the dishwasher. Then take a half-step forward—smaller than the width of the broom—and repeat. The broom strokes will overlap with the previous strokes. Continue to repeat the technique until all of the debris is swept in front of the dishwasher and sink. Then, sweep the debris toward the corner and collect it in the dustpan. Continue this pattern

until the kitchen is swept.

If your kitchen is long and narrow, try sweeping all the debris along one side and into a corner to pick it up in a dustpan. If your kitchen has a large center area, you may need to sweep one side and then the other. Use appliances and cabinets along each side as body-sized landmarks. Use the same technique described above but reach as far as is comfortable for you into the center of the room and sweep toward each side's landmarks. Then sweep the debris into a corner to pick up in the dustpan. When you are finished, you can mop the corner to remove any debris left, or, if you can bend over safely, hold onto the counter with one hand, use the upper protective technique with the other arm, and wipe the area with a damp paper towel.

Many people prefer to use a vacuum or electric broom rather than manually sweeping the floor. The same techniques of using a grid pattern and overlapping strokes can be used for vacuuming. Use landmarks to break up space into body-sized areas to make sure the whole floor gets covered.

You can mop using similar techniques. Sponge mops and floor cleaners that use disposable pads, like a Swiffer, are often easier for people to control than a traditional rag or string mops. The same concepts of sectioning off the floor with landmarks and then cleaning in a grid pattern will ensure that every part of the floor is clean. If you use a mop bucket, make sure to keep it out of the way to prevent tripping over it and consider using it to help section off areas of the floor.

You could use other patterns for cleaning, but most people find the grid method most effective. However, it may be helpful to experiment with other patterns to see what works best in each area of your home. It may be that cleaning in concentric circles works better than a grid pattern in some areas.

Making a Bed

Few adaptations are needed to make a bed. The primary difference is using tactile (rather than visual) methods to identify the direction the bedding goes and making sure it is even. Start by identifying the characteristics of the beds in your home. Do any have headboards, footboards, or side rails? Is the bed pushed against a wall on one side, or are you able to walk around both sides? It's easier to make a bed if both sides can be accessed.

Marking and identifying linens were discussed briefly in Lesson 9. If your

home has multiple beds or differently sized beds, you need a way to organize and label your bedding. Even if you have only one size or one bed, marking is helpful if multiple bedding sets are hard to tell apart. In addition to marking, another way to avoid mismatched sheets is to wash each set separately as they are removed from the bed and fold them together. Protective bags can be used to keep sets of sheets or coordinating bedding together.

Markings can also be used to tell which direction bedding should be placed on a bed. For example, if it is difficult to tell the top side of a bedspread from the bottom, put a small safety pin on the center's underside at the bottom. This adaptation will also make it easier to center the bedspread on the bed. Safety pins, buttons, or tags can also be used on sheets to mark the short or long sides. Tactile cues can differentiate between items within a sheet set, so marking them is probably unnecessary. The fitted sheet has elastic around the bottom, and the top sheet has flat corners. Sheets, blankets, and comforters all have different thicknesses and textures.

To make bedding fit symmetrically on a bed, use tactile cues to locate the top edge of a sheet; it may have a decorative seam or ruffle that you can align with the top edge of the mattress. Using landmarks and tactilely gaging distance, pull the top sheet and other bedding sides to hang evenly along the bottom of the mattress, box springs, or side rails. Some people prefer to tuck the linens under the foot of the bed, while others leave them loose.

Plugging into Outlets

You will probably need to plug electronic items into an outlet from time to time, like reading lamps, razors, hairdryers, radios, Talking Book players, blenders, phone chargers, coffee makers, or the vacuum cleaner. Everyone should be careful when plugging something into an outlet, and this task can be performed safely without vision.

Visualize an outlet as you read the following description: A typical wall outlet is designed for plugging in two appliances, one above the other. Most outlets accommodate three-prong plugs. The most common orientation for a grounded (3-pronged) receptacle has two vertical slots above the hole where the third longer round prong inserts. Some newer electrical codes now require receptacles installed in the opposite orientation with the one round hole at the top and the two narrow slots underneath.

You can explore an electrical outlet using your sense of touch. To prevent shocks, always plug items in with dry hands. Start at the top of the outlet

and trail down the outlet cover. You will feel that the center, where the prongs will be inserted, is either slightly raised and flat or indented in the areas of the narrow slots. Feel the areas where the prongs are inserted and note the orientation of the holes. Next, take the plug and orient the prongs in the direction you will insert them. Hold the plug in your dominant hand and use your other hand as a guide. Place the guiding hand on the receptacle, locate the holes for one of the receptacles, move the guiding hand to the side, just past the holes, and then line up the plug and slide it into place. You can put a bump dot or other tactile marking on the outlet cover next to each receptacle to act as a guide.

Two-pronged plugs sometimes can only be inserted one way. Newer plugs have one straight prong and a second prong that widens or fans out near the end. This type is a safety prong that goes into the left slot if the round hole is on the bottom. If the round hole is on the top, the wider slot will be on the right. Another feature of a typical 2-pronged plug is the plastic raised edge that protects fingers from the prongs. Examine some small appliances in your home and note this safety feature on the plugs. Any time you plug in an appliance, make sure your fingers are not touching the metal prongs and are safely behind the raised edge.

If you have low vision, you could buy outlet and light switch covers in colors that contrast with the walls. Or you could outline the raised edge on the outlet covers with contrasting electrical tape. Take your time when practicing plugging in appliances. Consider pulling up a chair so you are not bending over for an extended period. With practice, you can feel confident plugging in the appliances you want to use.

Replacing Light Bulbs

Most people, whether visually impaired or sighted, do not have trouble replacing a light bulb. If a bulb burns out when you turn on a lamp, it's probably cool by the time you gather the necessary tools to replace it. Make sure you know what type of bulb and what wattage is appropriate for each lamp or fixture.

First, make sure the light is off or unplugged. Remember to use the upper protective technique as you bend over to remove the plug from the wall. Locate the lamp's base and trail up the lamp until you locate the socket with the burned-out bulb and lampshade. For some lamps, you will need to remove the shade. If you have some usable vision, consider taking the lamp to a well-lit location to do this task.

Trail up the lamp once more and grasp the socket base with one hand and the lightbulb base with the other. Never hold the bulb by the glass because it could break in your hand. Firmly hold the socket as you turn the bulb to the left. Remember the saying, "Left to loosen and right to tighten." You may choose to discard the burned-out bulb before removing the new one from the packaging, as doing so will prevent you from mixing them up.

Locate the base of the socket with your non-dominant hand. Put your index finger on the top edge of the socket. Hold the new bulb where the glass and screw meet. Touch your index finger with the tip of the screw and gently slide it into the open socket. Turn the bulb to the right until it tightens. Replace the lampshade and plug the lamp into the electrical outlet.

LED bulbs may cost more than CFL or incandescent bulbs, but they last many times longer, do not contain mercury, and do not cause heat build-up. Because they are solid and have no filament, LED bulbs can withstand jarring, vibrations, and cold weather.

Halogen bulbs have some similarities to incandescent bulbs but produce a brighter white light that is more efficient per watt. However, they are more expensive and produce enormous heat—as much as 300 degrees. These bulbs emit a level of UV rays that can cause sunburn if you sit under the lamp too long. They are not generally recommended because of these hazards and should not be used in children's rooms. They can cause a fire if they come in contact with flammable material.

LED bulbs are often most effective for people with low vision because they come in many colors. People with functional vision may find that different colors enhance or impair their vision. Refer to the lesson on maximizing vision with non-optical devices to use light to enhance usable vision.

Operating Large Appliances

Most people who experience blindness or low vision later in life can rely on their previous experience operating appliances to cook or do laundry. However, if you don't know where the markings indicate the water's level and temperature or the settings for various fabrics, you can't operate your washer. If you can't read cooking times on the microwave, you can't reheat leftovers. Aspects of marking were discussed in Lesson 9, and using kitchen appliances was covered in Lesson 13, but consider what other home appliances are difficult to operate due to vision loss.

Before asking someone to help you label appliances, decide what you need to know. It can be tempting to label more than necessary, creating

confusion. For example, do you need to label every setting for the burners on the stove? On an electric stove, high may be at the 2:00 position on a clock face. Medium-high may be at 4:00, medium at 6:00, medium-low at 8:00, and low at 10:00. By remembering this, you may not need to mark anything, or you may only mark medium and a few other settings. You may want to get raised-print letters to label the settings on the digital panel of your oven. Read Lesson 13 for more information on this.

If your washer has dials and high contrast is helpful for you, try using brightly colored tape, so the markings stand out. Most people do not use all water levels and all three temperature settings. Decide which you use often. If you don't use every type of fabric setting, only mark the ones you use. Other laundry adaptations will be discussed in Lesson 15.

Consider which home-maintenance tasks may be hard due to unreadable labels or indicators. You may want to adapt other systems, including your security system, thermostat, water heater, and breaker box. As previously discussed, there are numerous ways to adapt appliances; some involve maximizing low vision with high-contrast color markings, while others are tactile or auditory. Bump dots and other tactile markings are often used on appliances and electronics. One of the more versatile stick-on marks is called Loc-Dots. These are small, clear stick-on labels with a raised dot in the center, similar to the raised dot on the Number 5 on a landline phone. They work well on dials, number pads, keyboards, and other appliance controls.

If you are comfortable with technology or have no functional vision, consider auditory ways to identify appliance settings. There are numerous talking devices, like thermostats or appliances with screen reader accessible apps. New appliances are sometimes able to be controlled through a wireless connection to a smartphone app. What if you could turn your oven on to the exact temperature you want while in the other room? What if you could change the temperature of the air conditioning while away from your house? These conveniences are increasingly available and can often be controlled using voice commands on smartphones or smart home devices.

Safe Use of Cleaning Products

There are important safety tips to keep in mind when cleaning. Recommendations like using protective techniques when bending over were reviewed in previous lessons. The following safety tips apply specifically to using cleaning products.

First, make sure each product is easily identifiable using the organizational and labeling methods described in Lesson 9. In addition to knowing what each product is, it is important to know how much to use and how materials can be used safely. You wouldn't want to damage a stone countertop or have the finish on a piece of furniture discolored.

Also, be aware of what harmful chemical interactions can occur if cleaning with more than one product and which products should not contact the skin. Wearing rubber gloves is a good safety precaution for many cleaning products. Gloves may prevent you from gathering some tactile information, but you can remove your gloves to feel for missed spots once an area is cleaned. Some people prefer to use inexpensive, environmentally friendly options for cleaning, like vinegar. Although you should check on the care instructions as not all options can be used on every surface.

Another safety tip is to wear protective eye gear when using cleaning products in spray bottles. As mentioned previously, it's easier to spray a product into a cleaning cloth rather than directly on a surface. Hold the cleaning cloth a few inches from the sprayer. This technique gives you better control of the spray.

Keep in mind, if children live in your home or visit frequently, make sure any cabinets that contain dangerous cleaning products are locked. Keep all hazardous products out of reach of children.

Summary

This lesson provided adaptive methods for basic home maintenance tasks and approaches to complete tasks independently. Examples were provided, but many other tasks and methods for accomplishing them could not be covered. As you begin using some of the techniques provided here, you will discover other ways of doing household tasks that may work better for you. You won't know which strategy will be most effective until you try. Be safe and keep trying different techniques. Experimenting with your ideas will strengthen your problem-solving abilities.

Suggested Activities

Try the following suggestions to start implementing what you learned in this lesson:

Practice using the grid pattern with overlapping strokes on a clear section of your kitchen countertop. Clean a small section thoroughly.

Identify which furniture, appliances, and cabinets can be used as

landmarks in each room to section off the floor.

Organize and label your cleaning supplies so that you are familiar with locating and using each one.

Lesson 15: Shopping and Caring for Clothing

Introduction

Individuals who are blind or have low vision face some unique challenges when choosing and caring for clothing. Before vision loss, it may have been simple to go to a store and pick a coordinating outfit and accessories. It wouldn't take much thought to decide that the navy slacks went with the white shirt and the navy and white striped jacket. Cleaning clothing, sorting laundry, and doing basic mending may have been equally effortless.

However, people with low vision or blindness often struggle or limit their wardrobe unnecessarily because they don't know adaptive methods for these tasks. Many people with low vision have difficulty distinguishing different colors or coordinating clothing. It may be hard to sort laundry, iron, or replace a button. This lesson covers adaptations for these challenges to help restore confidence.

Lesson Goals

- Learn methods to shop for new clothes
- Be able to identify and treat stains
- Know how to sort clothes for laundry
- Organize, label, and measure laundry products
- Adapt and set the washer and dryer
- Know methods for removing wrinkles, including safety tips for ironing
- Know adaptive methods for threading needles and doing basic mending

Shopping for Clothes

Lesson 9 covered adaptive methods for organizing and marking clothing, shoes, and accessories. Hopefully, those suggestions were helpful, and you now have a well-organized closet. Perhaps you even started using a color identifier or audio labeling system like WayAround. Maintaining your organizational system will save time and frustration.

Once you have a good system in place, it's time to consider adaptive shopping methods and buy new clothes. Various systems are available,

depending on your preference and priorities.

You may keep your wardrobe simple and wear mostly casual clothes. For example, it's not uncommon for men to keep things simple by wearing jeans or khaki pants with a Polo or T-shirt regularly. For people who know what they like and need to replace items, it can be beneficial to take a clothing item you like to a store and ask a customer service representative to help you find something that looks similar. You could also write down or use optical devices to find a brand and style number of an item you like and then do an online search to find a replacement or additional piece in a different color.

If you enjoy shopping or prefer a more extensive wardrobe, you likely want to go to a store and browse until something catches your attention. You may also be concerned about which styles and colors look best on you. You may have a friend or two that you trust to help you shop. If not, try to find a friend or family member whose opinion you trust, knowledgeable about colors and styles, and who will be honest about how an outfit looks. Professional relationships with customer service staff at your favorite stores are also helpful for shopping. Some clothing stores even employ personal shoppers who are knowledgeable and helpful. Get to know any personal shoppers at stores where you shop often.

If you like to wear certain colors, learn which colors look best on you, and take samples of those with you when you shop. Color names on tags can provide helpful information, but there are many color variations, and the names of colors change frequently. If you experienced vision loss as an adult, you probably have good memories of many colors, but colors you've never seen can be problematic.

Prices and discounts are good to know about but may be hard to determine independently. If you are shopping on a budget or going to a store for a sale, ask a staff member or personal shopper to direct you to the sections you want. If you can't read price tags, even with a magnifier or a smartphone app like Seeing AI, ask a store representative to scan items for you to determine prices before you decide what to buy.

Shopping for clothing is a time when you'll need to use your best self-advocacy skills to get what you need. For example, if you know you look good in bluish-red but not in orangey-red, you may need to ask about the exact shade before buying something. Ask a store clerk to compare the color to one you know.

Shopping online for clothes is another way to find items that match the sizes and price ranges you want. Many store websites describe items, colors, and styles. If you are familiar with a brand or store, buying items that match and are fashionable is just a click away. If a website is hard to navigate, try choosing a store that offers ordering by phone.

Caring for Your Clothing

Wouldn't it be wonderful if clothing never got dirty, wrinkled, or stained? Some types of fabrics seem to wrinkle before you leave home. No matter how careful you are, occasionally, food will drop on a tie, shirt, or pants, or grease from a car door will get on a jacket sleeve.

Treating Stains

When mishaps occur at home where stain removers are readily available, you can locate the stain immediately using your sense of touch or functional vision. Treat the stain with a stain-removing spray, presoak, or even a little laundry detergent. Immediately treating a stain may help it from setting in permanently.

Unfortunately, most clothing stains and dirt marks happen away from home. One tip is to carry a small stain stick or towelette pretreatment in your pocket or purse so you can treat a stain as soon as it occurs. To make sure you cover the entire area, use overlapping movements, and cover a larger area than you think necessary. There may also be things available to help treat stains when you are out. For example, club soda, believe it or not, will eliminate a red wine or spaghetti stain and is usually available at a restaurant.

If you are away from home when a stain occurs and do not have a pretreatment agent with you, there are many ways to treat a stain later. If it has dried, you can locate the stain by feeling for stiffened fabric using the sense of touch. However, some stains are hard to identify by touch. When these types of stains occur, carefully note the stain's location—is it near a button or another identifying characteristic? If you keep a rustproof safety pin in your purse or pocket, you can mark a stain when it occurs, so you won't have to search for it later. Always overtreat the stained area unless the stain is visible.

Daily dirt and sweat stains can be managed by always spraying a stain remover or prewash on collars, cuffs, and shirts' underarms. If you wash clothing items every time you wear them and use this cautionary treatment, you can avoid most permanent stains.

Before trying these treatments, make sure you know the manufacturer's cleaning recommendations for the item of clothing. Any clothing items marked "dry clean only" may be damaged by some cleaning agents. Label the hangers of garments that need special cleaning and always return the garment to its hanger. You can hang the cleaning instructions with the garment or keep a list elsewhere.

Laundry

Adults who are blind or have low vision often find sorting clothes the most frustrating part of laundry. There are simple adaptations to solve those frustrations. For example, if you organize and mark your clothes, you probably know which colors you wear each day. If you sort your clothes immediately after removing them, it will save time later.

As you sort laundry, try using two or more baskets or laundry bags to separate light clothing from the dark. Set up a system based on how you like to do laundry. For example, some people separate colors from whites, so they only need two bags or baskets. Others like to divide up laundry into more categories. If you separate your clothes as you wear them, you'll save time and avoid mistakes, like turning a white shirt into a pink one.

Another tip is to pin each pair of socks together or use sock sorters or sock locks. If you do this as soon as you remove your socks for the day, you won't need to sort them once they are clean. If you have several brown, navy, or black socks that are the same style, you could wash each color in a separate mesh bag. Even people with low vision who can separate light clothes from dark visually may find it helpful to keep colored socks that are hard to distinguish separated. Washable mesh bags can be used to separate other items to save time sorting afterward.

Another good idea is to wash all parts of the same outfit together, so all the parts will remain the same color. Washing will eventually fade colors, especially dark colors. To prevent colors like red or purple from running and staining other items, wash new clothing separately in cold water, adding a cup of white vinegar to the water. The vinegar will set the garment's red part and keep white collars or cuffs from turning pink.

Measuring Laundry Products

Labeling, organizing, and storing your laundry products in a designated place saves time and prevents mistakes on laundry day. Labeling laundry products is especially crucial because so many come in the same kind of containers as bathroom and kitchen cleaners. Confusing a prewash spray with a toilet cleaner could be costly.

Before you experienced vision loss, you may have used the cap of a liquid detergent bottle to measure the proper amount for each load. If you can no longer see the cap's markings, it might be easier to use measuring cups typically used for cooking. You can designate a different measuring cup for each load size. Put your index finger at the top of the measuring cup as you pour. When you feel the detergent touch your finger, stop pouring. If you have usable vision, try color-contrasting measuring cups. Just as it's easier to pour coffee into a white cup, it's easier to pour detergent into a contrasting-color measuring cup. It's a good idea to use a tray in case you pour a little too much.

Some people who are blind or have low vision use powdered detergent because they find it easier to scoop than pour the right amount of detergent. You could also try laundry detergent sold in single-load pods to simplify further.

Adapting Your Washer and Dryer

Start by familiarizing yourself with your washer and dryer and identify which settings you use often. Few people use every setting. Pay attention to the buttons and dials. You'll likely find that some settings do not need to be marked. For example, you may not need to mark the water temperature or load size, especially if you set these by clicking a dial. Mark only the fabric cycles (like delicate or permanent press) that you use. Use similar techniques on the dryer.

The best way to mark these machines depends on your personal preference. A thin line of electrical tape or a raised dot at each setting may be enough if you can remember what each represents. A raised letter at the end of each line, like a P for permanent press or D for delicate, might jog your memory. If you have low vision, use color-contrasting tape and letters and improve the lighting by installing overhead or task lighting above the washer and dryer.

Some appliances may have dials or buttons that are not easy to mark or use independently. Digital washers with buttons can also be challenging if they do not revert to a default setting after each use or require vision to cycle through the selections. Depending on your amount of vision, these machines may not be accessible.

Some models make audible sounds as you set them, and some models always default to "normal" when a load of laundry is finished. Someone with limited vision can operate the audible models that default to "normal" when a laundry load is finished. Many new models connect to an app, so if

the machine itself cannot be operated easily, you may be able to operate it with a smartphone. You might want to ask a vision rehabilitation professional to assess your machines and instruct in marking and using them.

Once your clothes are sorted and treated for stains and your machines are marked, it's time to do your laundry. One helpful tip is to put a towel or old sheet in front of your washer and dryer in case you drop any clothes on the floor while loading or unloading the machines. Systematically search the machine tub with your hands to make sure they are empty before adding clothes. Repeat this process when removing clothes from the machines. Check the towel on the floor for any dropped items before closing the washer or dryer.

Lesson 4 covered some strategies that can be useful with laundry. When setting a machine that uses dials, use hand-to-hand coordination by putting your index finger on the raised line or dot of the desired setting, and then turn the dial and align the pointer with your index finger. Practice your auditory skills by listening carefully for the washer to finish filling or stop spinning. Your dryer may have a loud buzzer to signal when the cycle is over. Don't forget to clean your dryer's lint trap regularly; it's easy to forget when you can't see.

Purchasing New Machines

When you need to buy a new washer or dryer, carefully examine the machine's dials and operation to make sure you can use it independently. For example, on some machines, the dials' pointers are under a plastic shield that makes them impossible to identify tactilely. As stated above, many digital models are challenging to adapt with accessible labels. A sighted individual could help by describing the panels of various machines. Before you buy a machine, you can ask the floor model to be plugged in so you can try the controls, including hearing the sounds it emits. The American Foundation for the Blind's AccessWorld magazine reviews the accessibility of a wide variety of large and small home appliances.

Alternative Laundry Solutions

Some people who are blind or have low vision decide not to do their laundry. Many busy professionals make the same choice. If the idea of handling the laundry every week is not appealing, or a physical disability or condition makes it too challenging, there are other options. Numerous laundry services are available. Cost may be a factor, so check what's available in your local area. Some services will pick up the dirty laundry and

drop it back off the next day, clean and wrinkle-free. Many laundromats have a drop-off service. People who use a housecleaning service sometimes ask the staff to do laundry while they clean. If one of these options fits your budget and lifestyle, then you can take laundry off the to-do list. However, it is still a good idea to practice adaptive methods for situations when you need to do a laundry load independently.

Adaptive Ironing Skills

Many people no longer bother to iron clothes. Products like wrinkle-removing sprays, permanent press, and synthetic fabrics make it less necessary. If you don't want to iron, there are effective alternatives. Wrinkle-releasing sprays are highly effective and can be used on most fabrics. All you have to do is spray and smooth the clothing with your hands. Some people hang clothing in the bathroom while taking a shower to allow the steam to remove minor wrinkles. Clothes steamers are a convenient alternative for an iron.

However, some people enjoy wearing clothing in fabrics that need ironing. Others like the way ironed clothing feels and looks. And we all sometimes forget to remove clothing from the dryer right away. Ironing is a skill that you may want to master, even if you don't do it regularly.

The first step is to fully explore your iron and its settings, either tactilely or visually. Notice how the temperature controls are set. If you have low vision, are you able to identify the settings? Some irons have controls that are similar to a clock face. For example, the delicate setting is at 1:00, and the cotton setting is at 6:00. If the settings are visible or easily memorized, you may not need to mark the iron. If marking would be helpful, only mark one or two settings.

The next step is to find the water reservoir and note how to fill it. Take special note of the cord in relation to the handle. Is it located at the base of the handle or on the right or left side? Most iron cords are located at the base of the handle.

For people with vision, cordless irons are great—you can just pick up the iron by the handle and begin ironing. There isn't a cord to get in the way of what you're doing. However, this advantage is a disadvantage for most people who are blind or have low vision. Anyone with limited peripheral or central vision or poor overall vision should never reach out in space for anything, especially an iron. Even if you don't get burned, you risk knocking over the iron or, worse, knocking the iron onto the floor. Later in this section, you will learn an adaptive technique for locating a hot iron and the

advantage of having a cord. For now, know that you can follow the cord with your hand up to the iron. The cord usually does not face the hot surface, so you can follow it to find the handle without fear of being burned.

Many people are set the iron on the ironing board before filling the water reservoir. However, this is not the most effective way for people who are blind or have low vision. To avoid spilling water on the ironing board or floor, set the iron on a tray on a counter and use a funnel and measuring cup to fill the reservoir. Some irons hold a third of a cup of water, and others hold a half-cup. If you use the appropriate-size cup, you will fill the reservoir completely and not spill any water. Once the reservoir is filled, set the desired temperature before plugging in the iron. Be cautious when changing the temperature on a hot iron. There is often not much space between the handle, the temperature setting, and the iron's hot surface.

For safety purposes, unless your ironing board has a heat-resistant tray built into it, set the iron on a heat-resistant pad on a counter or table instead of on the ironing board itself. Many ironing boards are wobbly, and a bump of your arm or foot could topple the iron if it is upright on the surface of the ironing board.

Keep the following suggestions in mind when buying a new board and when ironing:

- Choose an ironing board with 12 to 14-inch crossbars attached to the end of the legs. The width will help stabilize a top-heavy board.
- If you have low vision, note that items are easier to see on a solid (rather than patterned), medium-color ironing board cover.
- Always set the ironing board on tile or hardwood floors; avoid rugs and carpet.
- If you have low vision, make sure to maximize lighting and minimize shadows in your work area. Ceiling lights can sometimes cause your body to cast shadows on your work area, reducing your light as you work. Other types of lighting can cause glare and create visual discomfort.

Adaptive Ironing Techniques

Some of these suggestions will be familiar to anyone who has done lots of ironing; they are included here to provide a sequence to the process. Practice these techniques using a cold iron at first. Although you still have the muscle memory for ironing, you may feel more comfortable working with a cold iron until you gain confidence.

Unless your ironing board has a built-in, heatproof tray for the iron, place the ironing board with the wide end near a counter or table. Set the iron upright on a heat-resistant pad on the table, counter, or in the heatproof tray built into the ironing board. Keep the iron's handle facing toward the board and the ironing surface facing away from the board. As you iron, always return the iron to this location when you set it down. The cord should be plugged into an outlet that keeps the cord out of the way of your feet to avoid tripping over it or getting entangled. Consider adding a gadget to the end of your ironing board that keeps the cord off the floor.

Practice these steps for safely locating the iron. With the back of your dominant hand, trail the edge of the counter. When your hand touches the cord, trail up the cord, and grasp the handle. Do this several times to develop your confidence. If your ironing board has a built-in tray for the iron, trail the board's edge until you locate the cord, and then trail the cord to the handle. When you return the iron to its designated place, check the counter with your non-dominant hand to make sure there is plenty of room for the iron. To make sure you position the iron several inches from the edge of the table or counter, place your forearm along the edge of the surface and set the iron down on the far side of your forearm.

Many people smooth out the wrinkles on an item before ironing it. Use a pillowcase or similarly flat item for practice. As you spread it out to smooth the wrinkles, pay attention to how it feels. Can you feel when it is smoother?

Practice the following steps with a cold iron several times before plugging it in and turning it on:

- Use the grid pattern and overlapping strokes to iron a section of a garment.
- Let the ironed area cool for a few seconds and then use your sense of touch to see if the area is smooth. If so, continue to the next section of the garment.
- Always return the iron to its designated place before rearranging the garment.

After practicing a few times with a cold iron, begin ironing with a low setting and gradually increase the heat each time you practice. Review the techniques for plugging in appliances in Lesson 14. Many people are in the habit of securing one end of the item with their non-dominant hand while ironing. This technique is not recommended because a mistake in spatial

perception can cause a serious burn. A heat-resistant ironing accessory can be used to hold a garment in place, like a form for ironing curved areas or collars. Some people wear an oven mitt or glove on their non-dominant hand for more protection.

Learning to depend wholly or partially on your other senses may feel awkward. It may take time to become comfortable with the techniques described in this lesson, and trust your sense of touch to evaluate your work. Fear of the hot iron will eventually diminish, but always be cautious and try not to get distracted when ironing.

Hand Sewing

This section will discuss adaptive techniques for organizing sewing materials, threading needles, sewing on buttons, and making minor repairs, like fixing a garment's hem. It's a good idea to have a multicompartment sewing kit to organize and label thread, maintain needles and needle threaders, store extra buttons, and collect stabilizers. Keep your sewing tools organized together, including pin and needle cushions, adapted tape measures, straight pins, safety pins, thimbles, sewing scissors, rulers, and a magnet to find dropped pins or needles.

Begin a sewing project by organizing your materials on a tray. Set a needle stabilizer, like a large cork or a bar of soap wrapped in fabric, in the center of the tray. Put a pin cushion and needles in one corner, buttons in another, thread and needle threader in a third corner, and your scissors on the right side of the tray if you are right-handed. When you reach for a thread, a needle, a button, or the threader, trail your hand along the outside of the tray to the designated corner to locate what you need. Be careful when reaching for scissors or searching for the handle of the scissors. Always return scissors to their designated place with the blades closed.

Threading a Needle

Although there are several methods for threading a needle, this lesson will describe one method for threading an ordinary needle and threading a self-threading needle.

Dental-Floss Threader

The first method is using a dental floss threader to thread an ordinary needle. A dental floss threader is a device used with braces or dentures. They come in small, rectangular boxes with 15 or more flossers per box. You can find them with other dental products in grocery and drug stores. The threader is a little device consisting of a thin plastic string with a large loop at one end. Note that you cannot use a threader with needles that

have small eyes.

Follow these steps to use a dental floss threader to thread a standard needle:

- In the center of your tray, place a bar of bath soap wrapped in thin cloth secured with a rubber band or a few straight pins on the back. You can also use a large cork approximately three-by-one inches. If you have usable vision, wrap the soap in a dark material that will contrast with a silvery needle. This tool will be your needle stabilizer as you thread the needle.
- Choose a needle, preferably one with a fairly large eye.
- Examine the top of the needle carefully with your fingers and visualize the shape.
- Locate the needle's eye by holding the blunt end between your index finger and thumb and rotating it. Two sides of the needle flare out slightly. The flat, wider sides indicate the eye. Practice this technique until you can tell the difference. Be patient, especially if you have limited vision. This task requires well-developed tactile skills. If you have low vision, a magnifier that hangs around your neck may provide enough magnification to see the eye. You could also use a lamp with a built-in magnifier.
- Stick the sharp point of the needle into the center of the soap or cork. Make sure the eye of the needle is facing to your left or right, not facing you. The soap or cork will stabilize the needle, leaving both hands free for threading. Soap also keeps the points of needles sharp.
- With your dominant hand's index finger and thumb, grasp the floss threader near the tip opposite the loop. The closer to the end you hold it, the easier it will be to insert into the needle's eye.
- With the index finger and thumb of your non-dominant hand, create a vice around the needle's eye. Then push the tip of the threader between your thumb and index finger, through the needle's eye, to the base of the loop. This technique will let the threader dangle without falling out of the eye while you prepare to pull the thread through the loop.
- Unwind a generous portion of thread from the spool and pull at least three inches through the threader's loop. Grasp the tip of the threader and pull it through the needle's eye, continuing to pull until the three inches of thread fall free from the loop.

- You can detach the thread from the spool before you tie the knot or leave it attached until you make the knot.

Self-Threading Needles

As their name indicates, self-threading needles do not require a threader. Instead of the needle being closed at the top of the eye, there is a V-shaped opening. This opening can be located by feeling for the V's two blunt points, between which the thread is pulled. As the thread is pulled down through the V, it snaps into a small round hole serving as the eye and is secured.

To thread this type of needle, put the needle's point into the stabilizer with the little hole facing your left or right. Unwind several inches of thread. With your thumbs and index fingers, grasp the middle of the thread with both hands about one inch apart. The thread between your hands will be very taut. Place the taut thread across the V and pull down. You should feel and hear the thread snap into the hole. Pull the two ends of the thread together and tie a knot.

Some people can use both hands to tie a knot, but it may be difficult without visual feedback, so you might want to try an alternative technique. Hold both ends of the thread in one hand between your thumb and index finger. Wrap the thread around your index finger at least three times. Rub or roll the thread toward the end of your index finger with the first joint of your thumb. This method will create a "snarl" of thread as it rolls off your finger. Hold the twisted thread between your thumb and index finger and pull it in the opposite direction of the needle to make a knot.

Replacing Buttons

Individuals who are blind or have low vision can sew on buttons in much the same way as individuals using vision. There are just a few adaptations to simplify the task. Start with tactilely or visually determining the style of the button. Does it have two holes, four, or a shank? Do you have the color thread you need? Are your spools of thread organized with the colors labeled? Note that high-quality polyester thread is easier to use than cotton. It may cost a little more, but it frays less than inexpensive cotton.

Sewing on buttons may be easier than expected, especially for a two-hole or shank-type button. If you have sewing experience, you are already used to sewing from the underside without looking. Start by finding the missing button's original location by feeling for threads, small holes, or worn material where the buttonhole has rubbed. Then, make the first stitch

without the button. Pull the thread through the material and then drop one hole of the button over the needle. Now the button is in place before you start to sew. If the missing button was in the middle of a shirt, button up the shirt to align all the buttonholes. Then pull the needle and thread through the material and the buttonhole where the button is missing. When you unbutton the shirt, the needle and thread will be right where it needs to be to sew the new button in place. Hold the button in place, hold the button's edges, or cover the holes with your thumb using a thimble.

It may help practice on spare swatches of material to develop confidence and redevelop or strengthen your muscle memory. If the button that needs replacing is small, then practice can be especially helpful.

Many of the adaptations already covered in this section are the same for repairing hems. Set up a tray with all the necessary materials, match the thread, and thread the needle. The space between stitches will need to be tactilely determined, rather than visually, but the technique is the same.

Alternatives

Buttons will fall off, hems will come loose, seams will rip, and many people don't want to mend clothing themselves or never learned to sew. A tailor or seamstress can make alterations or repairs and replace buttons. Dry cleaners will often replace buttons, and some employ a seamstress. The dry cleaner's cost is usually less than that of a professional tailor. You may also be able to barter with a friend or family member or find a neighbor who likes to sew.

Summary

This lesson covered adaptive methods for shopping for clothing and cleaning and mending your wardrobe. People who are blind or have low vision can do all these tasks independently with adaptive skills and equipment. Consider the methods from this lesson and determine which will be effective for you.

Suggested Activities

Try these activities to start implementing what you have learned:

- Try asking for help from a customer service staff member or personal shopper next time you shop for clothing.
- Decide how many baskets or bags you need for sorting laundry and start developing the habit of placing all clothing into its designated location when you're done wearing it.
- Mark the settings you use most often on your washer and dryer.

Resources

- Purchase tactile adhesive bumps for marking appliances, self-threading needles (with the V-shaped opening), sock-locks, WayTags (for the WayAround app), and other adaptive items from the following companies.
- MaxiAids
- LS&S Products
- Independent Living Aids

Lesson 16: Basic Home Repairs

Introduction

Household management involves more than keeping your home clean and tidy. Knowing how to perform simple interior decorating and minor home repairs are important for a sense of independence. Most people enjoy decorating the walls of their homes with family pictures or paintings. Then there are basic home maintenance tasks, like replacing batteries in appliances and smoke detectors, tightening loose screws, replacing air filters, setting the thermostat, and finding resources for tasks you can't or don't want to do yourself. Caring for your home will build confidence in your ability to live independently.

Lesson Goals

- Select the tools needed to complete basic home repairs
- Follow adaptive tips to enhance your interior decorating skills
- Identify by touch the types of batteries used in small appliances
- Replace air filters for your heating and air conditioning system
- Identify the appropriate screwdriver for tightening loose screws
- Adjust the thermostat for your heating and air conditioning system
- Locate and turn off the water line to the toilet, kitchen, and bathroom sinks, and washing machine
- Reset the breaker box

Tools for Home Decorating and Repairs

If you enjoyed home decorating or home repairs in the past, you probably already own the tools referred to in this lesson. Designate a cabinet or toolbox to hold all or most of your tools. Include a sturdy carpenter's apron with pockets that can hold tools and fasteners for various jobs. The apron

will keep your hands free to work and keep your tools handy at the same time.

Standard and Adaptive Tools

Generally speaking, it is a good idea to buy the best tools you can afford. Bargain brand tools can break easily and be harder to use. Don't forget to label the items in your toolbox or cabinet. Keep an assortment of rubber bands, twisty ties, sturdy string, felt-tip pens, and notecards or post-it notes close for labeling.

- Screwdrivers- it's a good idea to have a basic screwdriver set with various sizes of flat-head and Phillips-head screwdrivers. If you have low vision, get screwdrivers with brightly colored handles that are easier to locate visually. Handles that fit comfortably in your hand are easier to turn. A magnetic screwdriver works well in places that are hard to reach.
- Fasteners and hooks-keep on hand several sizes of screws, nails, hooks, and picture hangers
- Hammer-ideally, use a general-purpose, 16-ounce claw hammer. The claw end not only removes nails but serves as a pry bar.
- Adjustable wrench and a vice grip wrench
- Adjustable and standard pliers
- Needle-nose pliers-these help hold nails or loosen screws; most pairs also include a wire cutter.
- Measuring devices-try to have a 12-inch ruler, yardstick, and metal tape measure. These can be marked with tape, dots of paint, or notched at the intervals you prefer. A standard fabric tape measure can be marked with French knots at 6, 2, 1, half an inch, or whatever you need. You can also buy adaptive versions of these measuring devices from specialty companies. If you have woodworking experience, you may want to buy a retractable, talking tape measure and a device called a Click Rule. This device is a threaded rod with tactile lines that click into place. It allows a measurement as small as 1/16 inch and is more precise than a retractable, talking tape measure.
- Batteries-many appliances require batteries, including TV remotes, flashlights, portable CD players, toys, lighted magnifiers, and hearing aids. It would help if you always had batteries available for your home's smoke detectors. You can save some money by buying a battery charger and rechargeable batteries. If you have room, get a

battery holder to hang on the wall near your toolbox, making it easier to take inventory of what you need.

- Flashlights and portable lighting sources-if you have low vision, it might be helpful to have more than one portable lighting source to help you when you're working around the house. Having enough light is essential for your safety and ability to do tasks. Snake lights are especially helpful under a sink because they can stand alone or be wrapped around pipes, leaving your hands free to work. LED lights provide bright light, last a long time, and are inexpensive. Many lanterns are free-standing and provide good light.
- Utility scissors-it doesn't take long to ruin office or kitchen scissors by using them to cut wire or other tough materials. Utility scissors are made to be stronger than typical kitchen or office scissors.
- Tape. Buy rolls of masking, electrical, duct, painters, packing, and any other tape you might need for projects.
- Glue
- Spray lubricant

Make sure you use the right tool for the job. For example, screwdrivers should not be used as a chisel or to pry open lids of cans. It's also a good idea to always return your tools to the toolbox so you can find them when they're needed.

Tips for Decorating Your Home

Many people enjoy decorating their homes with furnishings, pictures, plants, and other things that express their taste. The way your home furnishings are organized can make your home attractive, safer, and easier to navigate. Placing furniture along walls or using furniture to create straight pathways and square turns help prevent bruises or minor injuries.

If you have low vision, you may want to review Lesson 7 to minimize glare and maximize light in your home.

Decorating Your Walls

Everyone enjoys personalizing the walls in their homes with photos, paintings, clocks, or shadow boxes. Here's what you'll need from your toolbox to hang items on your walls: an adapted measuring device, ruler, hammer, needle-nose pliers, tape, nails, hooks, picture hangers, and your carpenter's apron.

If you're hanging one picture, try using your body height to decide how high to hang it. Mark the spot with a piece of tape or pencil if you have low

vision. Put a nail on the mark and hammer the nail about three-fourths of the way into the wall. Remove the tape before hanging the picture. You may want to make a small dimple in the wall where the nail will go to help hold the nail in place as you drive it into the wall with a hammer. You may find it helpful to hold the nail in place with needle-nose pliers to protect your fingers and provide color contrast. If the wall is made of drywall or sheetrock, try using hooks designed for this wall type.

If you are hanging more than one picture, think about hanging them at different heights, eliminating the need to hang multiple pictures at the exact height. To make sure the pictures are level, you can use a tape measure or long string to measure each frame's bottom corner's distance to the floor.

If you are not comfortable using a hammer, look for picture hangers to push into the wall with your hand. Many of these will hold a fairly heavy picture, especially if you push them into a wall stud.

Window Treatments

If you measure for new blinds, remember they fit within the window frame both vertically and horizontally. Some blinds are quite decorative, especially those with a cornice at the top that eliminates the need for curtains or drapes. If you want to add a sheer curtain that allows in light when the blinds are open, use an adjustable rod that is easy to install. If you're hanging curtains that open and close with pull cords, consider having them hung by a professional or a friend experienced in hanging draperies.

Replacing Batteries

Replacing batteries is a common household task. Most devices use one of six types of batteries. A TV remote generally takes double-A (AA) or triple-A (AAA) batteries. Size C and D batteries are often used for flashlights and toys. Some smoke detectors and talking bathroom scales take nine-volt batteries. Batteries for common hearing aids are shaped like coins and come in different sizes.

In the past, you may not have paid much attention to different battery sizes. With practice, you can use your sense of touch to differentiate between batteries. AAA batteries are the smallest of the tube-shaped batteries, double AAs are slightly larger, and C and D batteries are considerably larger. These types of batteries have a small terminal on one end and are flat on the other.

A nine-volt battery is rectangular and has two terminals on one end. These terminals snap into a small cap that holds the battery in place within a

device. The smaller terminal of the battery snaps into the larger terminal on the cap and vice versa.

When changing batteries, consider working over a tray. This technique helps keep track of the battery door, and the batteries will be less likely to roll away from you. New batteries might be left in their package or placed in a small container while the old batteries are removed. This method will help you differentiate the old batteries from the new ones.

Most battery compartments are on the back or bottom of appliances or devices. You can locate a battery cover with your fingertips. It may be marked by a few raised lines and slide off when pressure is applied, or it may have a small latch that lifts. Other battery covers are secured with screws that must be loosened with a small Phillips-head screwdriver before you can remove the cover.

Once the cover is removed, use your finger or fingernail to dislodge AA, AAA, and hearing aid or coin-type batteries. If you apply pressure against the end with the spring for sizes AA, AAA, C, and D, the batteries will pop out more easily. Remember, the flat end of these batteries goes against the spring. When you remove a battery, note how the battery was oriented in the compartment to orient the new battery correctly.

Sometimes battery compartments are difficult to locate tactilely or visually. You can put a long, thick piece of material, like string or ribbon, under the battery or in the battery compartment in these situations. When the battery compartment is closed, the string will stick out. This technique does not affect the battery's use and is a quick way to locate the compartment.

Tightening Loose Screws

Homes have many doors, including a front door, screen door, shower door, cabinets, and doors on furniture pieces. Most doors have handles, and most handles are attached with screws. Door hinges are also attached with screws. Electrical outlet and light switch covers are also usually attached with screws. Screws in all these places may eventually loosen with regular use.

As you probably know, there are two types of common screws. One has a straight slot across the head of the screw. You can identify this screw by running a fingernail inside the slot across the top. This type requires a flat-head screwdriver with a flat end that fits into the slot on the screw. In contrast, a Phillips-head screwdriver has four flanges that narrow to a point on the end. It fits into screws that have a cross shape on the top. If you have difficulty telling flat-head screws from Phillips-head screws, especially

when the screw is already driven into a surface, spend time feeling the heads of several screws until you can distinguish them from each other.

A screwdriver with a magnetic tip can make tightening screws easier, particularly if the screw is small or in a hard-to-reach place.

When working with a flat-head screw that is already in place, determine which direction the slot is in so you can orient your screwdriver correctly. Remember a basic rule for tightening and loosening screws: "rightsy-tightsy, leftsy-loosey." Another way to think about this is that right is clockwise, and left is counterclockwise. This rule often applies to tightening and loosening other items around your house, like lightbulbs, lids of jars, nuts, and bolts.

Maintaining Heating and Air Conditioning Systems

Good preventative maintenance on your heating and air conditioning (HVAC) system will reduce the need for repairs and extend the system's life. If your main unit is outdoors, keep leaves and other debris from collecting on top or getting stuck in the vents. Occasionally, spray the unit with a water hose to wash out the dust and small amounts of debris. Since you might not visually notice when leaves or dirt are building up, consider scheduling a regular time to do this activity.

If the indoor part of your HVAC unit is accessible, occasionally check for leaks. Some older units have small copper pipes through which water circulates. These can become corroded and begin to leak. Checking for puddles from time to time around the unit can prevent major damage to your floors or carpet.

The intake vents that circulate air through your home use filters to trap dust and other particles. Changing or washing filters every 1-6 months can improve your system's efficiency and possibly lower your monthly utility bill.

When changing filters, use your sense of touch to feel how the old filter is positioned before removing it. As you remove the filter, notice how it slides so that you can replace the clean filter with little frustration.

Portable air conditioners are also popular. The filters on these devices are usually on the side or back of the device. Although some of these filters need to be changed every 2-6 months, filters on many newer models only require you to occasionally wash the filters and then put them back in the machine.

A thermostat is the final part of a standard HVAC system. You may have more than one, depending on the size of your home. Are you able to see

yours well enough, with or without a magnifier, to operate it? Some thermostats have a digital display, making it very difficult for a person who is blind or has low vision to set. Some may be accessible with a talking device from a specialty company. If the talking device does not work on your system, ask someone to set your thermostat with parameters that will work for summer and winter temperatures.

If you have an old-fashioned thermostat with a small lever that slides up and down or back and forth, ask someone to help you mark temperatures that are comfortable for summer and winter, and then you can move the lever between the two markings. You can use tape or glue for this task. You can also use this method for rotary-type thermostats.

It is a good idea to have your HVAC system checked at least once a year by a professional. During these visits, you can ask the repair person to change the batteries in your smoke detectors. If you have your system checked more often, he or she can also change HVAC filters in or near the ceiling.

Smoke Detectors

Smoke detectors are critical for home safety. It is important to know how many detectors are in your home, where they are located, and what type you have. One way to keep your smoke detectors operational is to change the batteries when the time changes in both spring and fall.

Water Heater

Make sure you can locate and turn off your water heater's shut-off valve if it springs a leak. Some leaks occur around the shut-off valve and drip. Other leaks are internal through the pipes. This type can be detected by feeling the pipes near the bottom. They will be hot. On every water heater, there is a dial for setting the temperature. Adjusting this dial when you are away from home for several days can save money on your utilities. You may want to put a dot of glue or another kind of raised dot at the temperature you use most often and one on the vacation setting.

Water Shut-Offs

If you have a water leak in your home, you will need to find the water's shut-off valve to the toilet, bathroom sink, kitchen sink, or washing machine very quickly. A faucet-style valve below the tank usually controls water to the toilet. If your toilet does not have a shut-off valve, the water will need to be shut off outside. A similar valve near the wall usually controls water for sinks. The valve for the washer is usually located behind it on the wall, about waist high. The main valve that controls water flow to the entire

house is usually in a basement or outside. If it's outside, it is most likely in the front yard.

Breaker Box

It is important to know where your breaker box is located and which room or appliance each switch controls. Usually, the large switch at the top shuts off the entire house or apartment. Other large switches probably control large appliances, like the stove, refrigerator, and dryer. The switches that control each room in most breaker boxes look like a light switch.

When an electrical circuit in your home is overloaded, the switch controlling that circuit will flip to the opposite side to shut off the current. Trail down the switches to find which one is affected. To again engage the electricity, push the out-of-line switch back in place. Label all the switches, so you know what each switch controls. In addition to labeling the switches, it is a good idea to keep a record of what each breaker is linked to in a way that you can use it. A record can be created by recording the information or making braille or large print lists of which areas in your house correspond to the various circuit breakers.

Meters

Your electric, gas, and water meters may be located on the side of your home, in your front yard, or the basement of your house or apartment building. You may monitor your utility bill if you can read the digital display on the meters. Newer meters have real-time meter readings. Many companies can read your meter from their office. Utility personnel should not need to come into your house for a meter reading. When someone is coming to your home to change a meter, turn off a utility, or check something in the neighborhood, the utility company should notify you ahead of time. Do not allow anyone in your home until you check with your utility provider.

Doorbells

Most doorbells provide just a quick "ding-dong." Many can barely be heard, and if the television or radio is on, you may not hear the ring at all. Or, if you are in a room that is not near the front door, hearing the doorbell might be virtually impossible, even with good hearing. Consider replacing your doorbell with one that is loud and lasts more than two seconds. Check with a hardware store to see what is available. If you have limited hearing, consider a device you can attach to a belt or shirt pocket that vibrates or can be programmed to hear the doorbell no matter where you are in the house.

Summary

This lesson shared suggestions and techniques for household tasks. Before you decide to do a task yourself, keep in mind that being able to do a task is not the only issue. For example, you may be able to change the batteries in your smoke detectors, but it may not be safe for you to climb a ladder to reach them. Some tasks may require tools you do not have and hiring a repair service may be less expensive and faster than buying the necessary tools. Or you may choose not to do a project yourself simply because you don't like to do it.

Remember, even if you turn a household job over to someone else, it's always a good idea to know how the task is done. That knowledge puts you in charge.

Suggested Activities

- Look for some loose screws in your toolbox (or anywhere else you keep them). Then slide your fingernail across the head of each screw to identify whether it is a standard slot-head screw or a Phillips-head screw. Try gathering a group of 10 screws, with five of each type in different sizes. As you identify each screw, put it in a pile with the other slotted- or Phillips-head screws. Once you are done identifying each screw, you should have five types in each of the piles. Keep practicing until you can accomplish this task accurately.
- Examine at least five items in your home that use screws. Locate where the screws are on each item and determine if the screws are slotted- or Phillips-head screws. Some good items to include in this activity are light switch covers mounted on the wall, electric outlet covers, door handles, hinges, and handles of cabinets and drawers.
- Find at least five items around your home and determine the direction used to tighten or loosen them. Good items to look at are lightbulbs, soda or water bottles, screws, the end of a flashlight where you replace the batteries, nuts, and bolts. Also, look at some hot and cold faucet handles to determine if they follow the adage for tightening and loosening discussed earlier ("righty-tighty, lefty-loosey").
- Look at your circuit breaker box and see if you can identify the circuits. Try this with another person who can help you tell which rooms or items connect with each circuit. If you cannot easily identify the circuits, create two labeling systems. Create one system at the box for the circuit breakers themselves and a portable record of each circuit connection. For example, if you put a large print or tactile label

on the first circuit on the top left row, call that Circuit 1, the second one from the top Circuit 2, etc. Once you have done this at the circuit breaker box, then record it in a way you can read or access without going to the circuit breaker box. For example, if you can read large print, make a chart that lists #1, #2, #3, and so on and each connection's details. If you cannot read print, capture this information in a recorded format or using a computer or smart phone.

- Find items in your home that use the different types of batteries discussed in this lesson. Determine where the batteries are located in each item. Practice opening and closing the battery compartments. Finally, practice inserting and removing the batteries.

Resources

Find talking tape measures and tactile rulers/tape measures at the following companies:

- MaxiAids
- LS&S Products
- Independent Living Aids
- The Click Rule can be purchased from Highland Woodworking

Lesson 17: Recreation: A Must in Everyone's Life

Introduction

Pastimes, hobbies, and personal interests are enjoyed by people who are blind or have low vision and are as varied as the individuals themselves. Almost any recreational activity you can think of has been or can be adapted for visual impairment. For example, if you once enjoyed golf, skiing, bowling, or swimming, these sports are still accessible with very few modifications. People who are blind or have low vision enjoy crafts like pottery, knitting and crocheting, ceramics, and woodworking. If you enjoy reading, you may be struggling to cope with the loss of accessing print books; however, there are still great options for reading. For example, many individuals develop a love of reading through Talking Books.

Recreation is a must in everyone's life, and that includes you. Sports, hobbies, games, physical activities, and other activities offer endless benefits to your health and sense of well-being. Perhaps the most valuable benefit of recreational activities is the opportunity to interact socially with a

diverse group of individuals.

The Internet is a great way to look for groups, organizations, or programs for people who are blind or have low vision. Go to the search box of a web browser and type the word "blind," followed by whatever activity you are interested in, like "blind knitting," "blind cycling," or "blind board games." If the Internet is not your thing, ask a friend or family member who uses the Internet to help research activities. At the end of this lesson, you will find contact information for a variety of recreational organizations.

Lesson Goals

- Access books, magazines, newspapers, and other reading materials in a variety of audio formats
- Join family and friends in playing cards, checkers, dominoes, Scrabble, Jenga, and other games, with or without adaptations
- Participate in favorite hobbies, such as pottery, knitting, woodworking, gardening, genealogy, or coin collecting, with or without adaptations
- Take part in sports like golf, skiing, bowling, swimming, or baseball, competitively or as a spectator
- Enjoy outdoor recreation, such as hiking, camping, sailing, biking, fishing, or bird watching, alone or with others
- Improve your physical and mental wellness through exercise, dance, yoga, or volunteering, alone or with others

Accessible Reading Options

Most people probably do not know that phonograph records were created specifically to provide recorded books for people who were blind and couldn't read print. Today, audiobooks can be heard through a new generation of listening devices and a popular reading option for visually impaired and sighted audiences. Almost any popular novel, nonfiction book, general interest publication, trade magazine, or newspaper is available in various accessible audio formats.

National Library Service for the Blind and Print Disabled

The National Library Service for the Blind and Print Disabled (NLS), sometimes called the Talking Book Library, is a network of cooperating libraries similar to a local library, except they distribute books or magazines that are audio recorded, large print, or braille to people with visual or other disabilities who cannot access regular print books. Books called Talking Books are loaned through the NLS program and mailed free. Each

audiobook is recorded on a cartridge and played on a reading machine, which is loaned free of charge by the NLS. Talking Books can also be downloaded from the Braille and Audio Reading Download (BARD) website and played on the Talking Book digital player or another specialized audio player via a USB thumb drive. A free BARD app is available for iOS, Android, and Kindle devices that allow users to search for, download, and listen to audiobooks.

Most states have a Talking Book Library that distributes players and books. You may be assigned a reader consultant who can teach you how to order books and use BARD. The players come with instructions, and each button on the player, if pressed without a cartridge inserted in the device, will announce its function. Books come in a container approximately 4" x 4" by 1". On the front is a card with your address; on the back is the Talking Book library's address, or in some cases, it is printed on plastic underneath the card. To return the book, turn the card over, or remove the card, and the book will be ready to mail without adding postage.

To apply for this service, call 800-424-8567, or visit National Library Service for the Blind and Print Disabled Eligibility, to ask for assistance from state or private agencies that provide services for those with blindness or low vision.

Audio Players Designed for People with Visual Impairments

Some audio players are designed specifically for those with blindness or low vision and do not require visual prompts. Instead, these devices are operated with audio prompts and easy-to-use keys.

One of the most popular devices is the Victor Reader Stream (VR Stream). This device is sold by HumanWare and is about the size of a deck of cards. It features text-to-speech capabilities and digital audio support. With the VR Stream, you can read electronic files with synthetic speech or digitally recorded books with human speech. It plays books in various digital formats, including Learning Ally, Talking Books from the NLS, and Bookshare. It can also play downloaded music.

Electronic access to print material and books has changed the way readers of all abilities read. Devices like the iPad, smartphones, and Kindle Fire have increased access to printed material and the availability of new publications for people who are blind or have low vision. Electronic text lets low vision readers enlarge print by increasing the font size on a device. People who cannot read print can use screen reading software, like JAWS or NVDA, on a computer or Apple's VoiceOver to have text read aloud by a

synthesized voice.

If reading your favorite newspaper is the way you like to begin your day, then try the NFB-Newsline. This free program, provided by the National Federation of the Blind, allows users to access many national, state, local, and international newspapers and magazines. These reading materials can be accessed through the telephone, on the web, or through an app. To learn more and to sign up, visit the National Federation of the Blind-Newsline.

Optical Character Recognition

Some methods and devices use optical character recognition to read printed materials. One commonly used standalone scanning software program is called Open Book. This software allows a person who is blind or has low vision to put a page of printed material on a scanner that looks like a small copy machine. Scanners using Open Book will scan the printed material and convert it to speech to listen to the printed page's information. This method can be used for single sheets of printed material or for a full book (one page at a time).

Similarly, apps are available that work by simply taking a picture of printed material and then reading the information audibly. These smartphone apps are useful for reading menus and directions on food packages and can even scan multi-page documents. Various stands can be purchased to hold the smartphone for longer scanning tasks.

Braille is also a great way to access print. Braille is a reading and writing system by touch used by people who are blind or have low vision. It uses a system of dots for the alphabet, numbers, punctuation, and words. It requires touch and memory, but people of all ages can learn to read braille. The Hadley Institute provides no-cost distance education on braille reading via large print, audio, and internet courses. To contact Hadley, call 800-323-4238.

Playing Games

Playing games with friends or family is a popular pastime. Getting together with friends for an evening of canasta, dominoes, Wits & Wagers, or trivia can alleviate stress, release calming endorphins, and provide a social outlet. A game of Scrabble, chess, or dominoes between a grandfather and his granddaughter creates memories and strengthens bonds. Weekly card games hosted by a local Senior Center can provide a social outlet, an opportunity for healthy competition, and a place to develop new friendships.

If you have difficulty seeing cards, Scrabble letters, or a game board, you may shy away from these events. But there is good news! Following are some methods and tools that can allow you to continue playing the games you enjoy.

Adapting Games

Many games have been adapted for people who are blind or have low vision. Catalog companies or stores specializing in products for seniors or people with visual impairments offer large print playing cards and bingo cards. There are Scrabble and checkerboards with raised edges around each square with interlocking pieces. Monopoly, Chinese checkers, and other games have versions adapted for people who are blind or have low vision.

Some of these games are expensive, so before you buy, consider adapting the games you own. Many games need a few adaptations to be accessible. For example, a Cribbage board can be adapted for low vision by outlining peg holes with a contrasting color. If you love dominoes, buy white Dominoes with raised black dots and play on a dark surface. Low vision players can see the dominoes' outline and tell where to add on; blind players can feel the raised dots and know where to play. Games like Mancala or Jenga do not need adaptations to play with a visual impairment.

If you enjoy playing cards—bridge with a bridge club, canasta at a senior center, or hearts with your grandchildren—but can't see large print cards, then consider learning enough braille to play using braille playing cards. Braille playing cards are standard playing cards with the numbers and suits printed on them, but they also have braille symbols printed in the upper left and lower right corners of each card. Learning 15 braille symbols is all that's needed to play any card game. It may take a little time, but it's worth it to continue having fun!

Some individuals with low vision might prefer to use other options. Instead, they might use a magnifier or a task lamp to help them see the cards. When the cards are laid on a table, others can be asked to call out the cards as they play.

Solo Games

If you enjoy competing against yourself, some bookstores and specialty stores sell large print Sudoku and crossword puzzle books. There are also special jigsaw puzzles with larger pieces that are easier to see and lock in place, especially if you have arthritis or mild tremors.

Online Games

If you have internet access, you can enjoy free games. Many popular games can be found online including sudoku, solitaire, Uno!, chess, and Boggle.

After considering these adaptations and options, you can host a game night for friends or family. Adapt some of your games or buy large print cards. If you aren't ready to try adapted games, play a game like Wits & Wagers or Outburst that requires only one sighted person or someone with low vision using a magnifier to read the game questions. Remember, the real purpose of playing games is to have fun with friends and family!

Going to the Movies

Many people enjoy going to see a movie at a movie theater, and people who are blind or have low vision are no different. Have you stopped going to movies because it is difficult to follow what is happening on the screen because you cannot see it? Do you get tired of being shushed by others because you have to keep asking the person next to you what is going on in the movie?

Many movie theaters offer a free service to customers who are blind or have low vision called descriptive video. To use this service, the movie theater will give you a headset. When wearing the headset, you will hear a narrator describe what is happening on the screen when no words are being spoken or when the action is too fast to follow visually. Only you will hear the described video through the headset. It is good to call the movie theater ahead of time to reserve a described video headset, as some have only a limited number. If your favorite movie theater does not offer this service, let them know it is a wonderful service they could be offering to customers who are blind or have low vision. Note that many DVD movies have built-in audio description. Select the audio described soundtrack before beginning to play the movie.

In addition to movies, many television shows are now produced with described video. Contact your local television station or provider to find out which programs offer described video service and how to access this service on your television. Many televisions can access the audio descriptions when the secondary audio program (SAP) is turned on. By the way, specialty catalogs and stores sell remote controls that are easier to see. Also, some newer remote controls have microphones and can be operated with voice directions.

Hobbies

For many, hobbies like pottery, knitting, gardening, genealogy, collecting coins or baseball cards, or woodworking are ways of expressing their inner selves and gaining a sense of achievement. Nearly every kind of hobby is enjoyed by people who are blind or have low vision. There is not enough space in this lesson to describe adaptive techniques for more than a few activities, but you can find resources for almost anything you want to pursue.

Knitting and Crocheting

If you enjoy knitting or crocheting but have hesitated to continue, here are a few suggestions:

- Switch to larger needles or thicker yarn. Large needles make it easier to count stitches and check your pattern.
- Use light-colored yarn and place a dark towel underneath to add contrast.
- Use simple patterns that won't require reading detailed instructions or create your instructions in a font you can read, enlarge them on a copier, record them, or use magnification. Some specialty companies sell large print knitting and crocheting pattern books.
- Work with your fingers close to the tips of the needles. It will be easier to tell if you've dropped a stitch or left one unadded.
- Keep count of rows or stitches by dropping a penny, small button, or bead into a container as each row is completed. You could also buy an abacus to help with counting.
- Keep your yarn in a container, like a can with a plastic lid. Make a 1-inch hole in the center of the lid and thread one end of the yarn through it to prevent the yarn from rolling away or getting tangled.
- Put rubber bands on the tips of your needles to keep stitches from falling off when you're not working on a project.

Revisit Lesson 9 for ideas for labeling and organizing your yarn and needles.

Genealogy

If vision loss caused you to stop exploring your genealogy, you would enjoy Lesson 19, where you can learn how to explore genealogy online. Many people who are blind or have low vision spend hours researching ancestry online. You could also get involved with a genealogy group.

Woodworking

If woodworking is your favorite hobby, you don't have to quit using your power tools because you are losing your vision. Many woodworkers who are blind or have low vision safely perform woodworking tasks daily. Resources that can help you continue this rewarding pastime are listed in the Resources section.

You may already have many of the tools you need for woodworking, but you will need to buy measuring tools, like a click rule, modified for people with vision loss. You can also learn techniques for modifying your tools from experienced visually impaired woodworkers. Some state and private rehabilitation centers and veteran's administration rehabilitation centers offer woodworking training for people who are blind or have low vision as part of the rehabilitation curriculum. There are also woodworking reference books and audio recordings of woodworking publications made for people who are blind or have low vision.

Gardening

Did you know that the French painter Monet was an avid gardener? He loved flowers almost as much as painting, and even when he lost most of his vision, he did not stop painting or gardening. Your visual impairment does not have to spoil your gardening pleasure either.

Here are a few helpful tips:

- Using raised beds, containers, or pots creates boundaries to work within. They also make it easier to reach the soil and plants.
- Choose tools that are durable and lightweight. Brightly colored handles make them easier to see if you have low vision.
- Eke garden trowels have engraved markings to indicate soil depth, making it easier to determine how deep to plant bulbs and transplants.
- Keep both hands free by carrying tools in your carpenter's apron from your toolbox or get a gardener's apron.
- Plant vegetables in a row with the plants evenly spaced. Stake a rope across each row. Tie evenly spaced knots in each rope and plant a seed or transplant at each knot. Any plant not along the line is probably a weed.
- Seed tapes laid in a row are also good for maintaining rows. The tape will eventually dissolve, and your plants will be evenly spaced in a row.
- Plants not organized in rows should be labeled for identification if

they are not familiar to you.

Adaptive Sports

If you enjoy sports, you may find this section encouraging. Every two years, blind athletes from around the world compete in the Paralympics. In the 2016 summer games in Brazil, three blind runners in the Paralympics beat the finishing times of sighted runners who won medals in the same event in the Olympics. Some organizations support blind athletes in golf, skiing, bowling, sailing, track and field, swimming, and more. There are two sports—beep baseball and goalball—designed for blind athletes. Contact the United States Association of Blind Athletes at 719-866-3224 for information on adaptive sports and recreation for people who are blind or have low vision.

Bowling

Bowling requires little or no adaptation for people who are blind or have low vision. Many bowling alleys have a portable guide rail that you can hold onto to help you with your approach and delivery, guiding you toward the pins. If you are on a team or a frequent bowler, you may want to purchase a lightweight guide rail that can be easily assembled and stored. Some bowling alleys will let you use color-contrasting sports tape and thin rope to create a long, thin, raised line down the center of the approach of a lane to ensure you are walking in a straight line toward the lane. This method allows you to move both your arms and legs during your approach. Some people use a sighted guide to help them line up where they want to execute their delivery. Some bowling alleys also have a ramp for people who have difficulty bending over to throw a ball.

A print copy of a chart showing the pin set-up can be helpful, especially if you are competitive. After you throw the first ball of each frame, a sighted person or someone with low vision who uses a monocular can use the chart to point out which pins are still standing. This chart helps you strategize where to throw the next ball for best results. If you aren't bowling in a league, you can ask the bowling alley to set up gutter bumpers.

Golf

Blind golf is a popular sport, and many outstanding blind golfers are playing the game. How can you play golf if you can't see to hit the ball and can't see where it's going or landing? The adaptation allowed for blind golfers is limited assistance from a sighted coach.

A coach's primary duty is to help line up a blind player with the upcoming

hole and help put the club directly behind the ball, so the blind person knows where the ball is and which direction to hit. Much like a caddy in regulation golf, a coach is allowed to describe the hole's characteristics, where hazards lie, the slope of the fairway or green, and areas the golfer should try to avoid. (Some golf instructors think that blind golfers don't need to know about hazards. They believe this information is an unnecessary distraction, but this is an individual preference of the blind golfer.). Once a coach has lined up the shot for a blind golfer, the shot's actual execution is completely up to the golfer.

Skiing

Alpine downhill skiing is a rare opportunity for a person who is blind or has low vision to move freely and independently, experiencing the exhilaration of speed. Cross-country skiing generally occurs on smaller slopes than downhill but is equally challenging. To safely meet these challenges, skiers who are blind or have low vision use a guide who describes the surroundings, chooses the line of descent, and provides verbal instructions. If the terrain has wide slopes and few obstacles, the guide may follow the skier, providing verbal descriptions and instructions. At other times, the skier will follow the outline of the guide's body and movements as the guide provides orientation and verbal instructions. A lightweight, portable amplification system can help the guide and skier stay in close communication.

Ski for Light

Ski for Light is an organization that promotes cross-country (Nordic) skiing across the U.S. and the world. There is a major National Ski for Light event in the U.S. each year, and many states or regions of the country also have local events. These events bring together people who are blind or have low vision who want to learn to cross-country ski and experienced skiers. These events encourage participation from family and friends as well.

For both downhill and cross-country skiers:

- Enroll in a ski clinic for beginners or persons returning to the sport with a visual impairment.
- Use properly fitted ski equipment and clothing. Many ski resorts or clinics offer rental equipment.
- Ask your eye doctor about lenses or goggles that can help reduce glare when skiing. Lenses can be tinted in a range of colors to decrease various wavelengths of light that can cause glare.

Sports and Recreation Created for People who are Blind or Have Low Vision

Beep Baseball

The National Beep Baseball Association (NBBA) was organized in 1976 for adults who are blind or have low vision to play baseball. Each year, the NBBA coordinates local, state, and regional tournaments. Each August, the NBBA sponsors a national and international invitational tournament called the World Series of Beep Baseball.

Beep baseball is played on a grassy field with six fielders: a first baseman, a third baseman (there is no second base), shortstop, left and right-fielders, and center. The fielders and batter are blindfolded. Four other participants—pitcher, catcher, and two spotters—are usually sighted. The sighted spotters are out in the field and call out a number indicating which part of the field the ball is traveling. The middle of the outfield is number six, and the left and right sides are numbered one through five in a mirrored pattern. The left-field spotter calls for the left-field and the right-field spotter for the right. Each game is six innings unless there is a tied game at the end of inning six.

Beep baseball is different from regular baseball in a few ways. For example, the pitcher pitches to his or her teammates and throws the ball in such a way to help the batter hit a home run. The equipment includes an oversized softball with an embedded beeper. Just as the pitcher throws the ball, they pull a pin from the ball, activating the beeper. The bases emit buzzing sounds to orient runners.

Goalball

Goalball is a team sport created specifically for people who are blind or have low vision in 1946 to help with rehabilitation for World War II veterans. Today, there are male and female goalball teams worldwide playing competitively and in the Paralympics. To play on a competitive goalball team, a person must be completely blind or have low vision. During a game, all players on the court must wear a blindfold, even if they are blind. Blindfolds level the playing field between low vision and completely blind athletes.

Goalball is played on a court similar to a basketball court's size, using a ball slightly larger than a basketball that contains bells so the athletes can hear the ball. Each team has three players on the court at a time strategically placed at opposite ends of the court. The ball is pitched out on the floor like a bowling ball toward the opposing team's end of the court. The opposing

team protects their end by stopping the ball with their bodies—torso, hands, feet, legs, etc. If the ball goes over the goal line into the end zone, the offensive team gets the point.

When the ball is "put into play," the defensive team goes into defense mode, usually on their knees. If necessary, they will throw their whole body in front of the ball to stop it. Balls can move at 35 miles per hour or even faster. Some Olympic athletes can throw the ball over 45 miles per hour. Because the players are protecting their end zone with every part of their bodies, they wear protective gear: knee and elbow pads, chest protectors, and sometimes even a face mask.

Because the players depend on their hearing to locate the ball's position and defend their end zone, spectators must be completely silent during play. In other words, there's no cheering when your team scores!

Olympic-level goalball players play at high speeds and with great intensity, but do not be intimidated. Goalball can be lots of fun at a much slower pace if you're not afraid of getting a bruise now and then. If you decide to join a team, talk with your eye doctor first. People with glaucoma or who are at risk for detached retinas should not participate in goalball.

Sports as a Spectator

If you are an avid sports fan, you know you don't have to be an athlete to enjoy a baseball, basketball, football, or hockey game! Since losing your vision, have you been to see your favorite team play? If so, what accommodations did you make to enjoy the game to the fullest? If you have some usable vision, did you take binoculars or a monocular to watch the field or court? Did you choose seats so you could see the maximum amount of the field or court? Did a companion describe the action for you, or did you take a radio and earphones or use apps on your smartphone to listen to the play-by-play? All these suggestions are possibilities, and planning will ensure you have an enjoyable experience with an extremely visual activity.

The Royal National Institute for the Blind in England works with Access Audio to ensure every soccer and rugby stadium has state-of-the-art equipment for broadcasting descriptive audio to people who are blind or have low vision. According to spectators who have used the equipment, the system provides great reception. These systems are portable and can be moved between venues.

Although accessibility in sports venues is not as common in the U.S., some

larger arenas, like the American Airlines Center in Dallas, use an internal radio frequency to allow spectators to listen to the television feed on a portable radio. If your favorite sports arena or stadium does not provide accommodations, try using your best social assertiveness skills to inform the arena or stadium administration what is needed to ensure all fans enjoy the games.

Outdoor Recreation

You need not go far from your back door to enjoy the fun of outdoor recreation.

Horseshoes

A rousing game of horseshoes in your backyard can quickly lift the spirits of avid horseshoe players. Color contrast and a sound source can make horseshoes almost as much fun as ever. Look for a set of horseshoes that are rubber coated and larger than a standard set. To make the horseshoes easier to see, wrap yellow tape around one pair and another bright color, like orange, around the other pair. Do something similar to make the stakes easier to see. If you do not have enough vision to see the stake you are throwing to, put a sound source a short distance behind the stake. It should be close enough that you don't overshoot your target but not so close that it prevents you from getting a ringer!

Bicycling

You may remember a very old song called "A Bicycle Built for Two." These days two-seat bicycles are called tandem bicycles, and they are a popular way of enjoying the outdoors. There are tour groups that arrange trips for people who like to vacation on their tandem bicycles.

If you love riding your bike, but don't feel safe on the road since losing your vision, try a tandem bike. You will still get a great workout, you can maintain good speed, and you don't need to worry about a car coming between you and your riding partner. Usually, the team's sighted member (the pilot) sits on the front seat of the bike and communicates what's ahead. Your partner can also provide information about surface changes, obstacles, turns, upcoming hills, and when to brake. Your partner can also describe the scenery for you if you'd like.

The visually impaired cyclist usually sits in the back seat and is called "the stoker." You don't have the responsibility of steering, but if you want to get very far, you'd best not neglect your duty of helping to pedal. It takes some coordination to ride with another cyclist, so before you take off on an

adventure, practice on quiet, straight roads with few inclines.

Fishing

Fishing is a good pastime for anyone, regardless of how much sight you have. It is a relaxing, healthy, and affordable hobby that is accessible to all.

If you fish in calm waters, you may not need a device that lets you know there is a fish on the line. Learn through touch when a fish is pulling on your line. Pay attention to how your pole feels when there isn't a fish on your line. Ask a fishing buddy to watch and tell you when your bobber goes under so you will begin to recognize how your pole reacts when there's a fish after your bait. It doesn't hurt to jerk on your pole if you think there's a fish.

There are a few items you can prepare at home before you go fishing:

- Examine your equipment carefully. Get the feel of how everything works.
- Keep your tackle to a minimum and keep it well organized.
- Make sure you have a sharp penknife with your tackle.
- Tie set-ups in advance to use while fishing.
- Practice, if possible, putting on the kind of bait or lures you plan to use.
- Make sure you have a visor or hat, magnification devices, bug repellent, and good U.V. sunshades.
- Check out catalogs and angler shops for devices that might be helpful.

Once you arrive at your fishing site, get familiar with the environment so you can stay mobile but safe. Have another fisherman spot you when you cast. Always be aware of the location of your hook when it's not in the water.

In many parts of the U.S., groups offer fishing events for people who are blind or have low vision. Check out what's available in your region. The American Council of the Blind and the National Federation of the Blind, as well as Lions Clubs and other service organizations in your area, may sponsor fishing trips for visually impaired people who love to fish.

If you are legally blind, you are entitled to a free fishing license in many states. To obtain this license, you will need a signature from your eye doctor or a professional from your local or state agency that serves individuals who are blind or have low vision. You can request an application

through your state's Department of Fish and Game. These special licenses are not available at stores that sell regular fishing licenses. It will take some time to complete the process, so it is a good idea to plan.

Hiking

The word "hiking" conjures up images of adventure, whether it's wandering a path of pine needles through the woods or trekking along a creek in the heart of a busy city. Hiking relieves stress, relaxes the mind, and brings a sense of refreshment. The beauty of hiking is not limited to people with sight. People who are blind or have low vision can enjoy a plethora of sounds, smells, and textures as they explore the hiking environment without the distraction of visual information. Count how many bird songs you hear. Listen for a gurgling stream or waterfall in the distance. Feel the air on your face, pine needles underfoot, the bark of a birch tree, or a giant knee of a cypress in the creek. In the spring, all the flowering bushes, plants, and trees can make your nose twitch.

Preparing to hike includes taking precautions. It's safer to hike with another person, probably someone who is sighted, unless you limit your hiking to paved or gravel trails. Some enjoyable trails might have logs across the path or uneven, rocky stretches. People who are cane users may prefer to use a cane or hiking stick in one hand and hold onto one end of a short rope with the other hand, with their partner holding the other end. These tools will help you navigate changing elevations and rough terrain. With your white cane or hiking stick, you can detect a hole in the middle of the trail or avoid stumbling over a tree root. Your cane or hiking stick may detect an obstacle in the trail that your partner doesn't see. If you hike a lot, consider buying a pair of hiking sticks that are sturdier than a white cane and have spikes on the end to help with unsure footing. Don't forget to carry a water bottle, your phone for emergencies, sunscreen, insect repellent, and a small first aid kit.

Blind Outdoor Leisure Development (BOLD) is a terrific resource for people who are blind or have low vision who want to participate in outdoor activities. Like other regional organizations, the Appalachian Mountain Club organizes group hiking activities and encourages hikers to maintain local trails.

Birding by Ear

Retired biologist Jerry Krummrich challenged himself to learn to identify birds by voice: "I recognized how much more enjoyment was to be obtained by knowing bird songs and calls because we hear so many more calls than

we can see birds in the bushes and trees." Birding can be done from your back porch or on a hike through the woods. If you are blind or have low vision, singing birds in the morning are one way to know the sun is rising. Many birding guides are available that play the sounds of various birds with the push of a button.

If you are an avid hiker, adding birding to your outings can enrich your hikes. You can join the Audubon Society and get credit for identifying birds by their songs. This credit is the same that sighted people get for visually identifying different species of birds.

Camping

In the past, you may have loved going to a campground, pitching a tent, setting up your food supply like Fort Knox to protect it from critters, and heading off to the creek to go fishing. Camping is still possible with a visual impairment. It takes very little adaptation because you probably won't be going alone, and the person going with you will likely have vision. You may need to organize your supplies more carefully than in the past and do a better job keeping track of everything. Food containers should be labeled. If you plan a menu and put items together by meal, you can eliminate rummaging through containers looking for what you need. Some of the other activities discussed in this lesson can add to your enjoyment of camping. For example, bring adapted games the group likes to play, go hiking, or spend time birding.

In addition to camping with sighted friends, there are camps created for people who are blind or have low vision that offer a wide variety of activities. Accessible retreats are also available.

If you are a national parks enthusiast and are legally blind, you are eligible for a free Access Pass. An Access Pass gives you and the other occupants of your car (or where there is a per person charge, up to 4 adults) free admission to all U.S. national parks, and the pass is valid for life. You will need a physician's statement or another document to verify your visual impairment. Contact the National Park Service for details or to apply.

Rigorous Outdoor Activities

Wilderness Inquiry is an organization based in Minnesota that provides organized outings for outdoor activities. They cater to people with disabilities and their friends and families. They encourage all participant levels, from those who want to try outdoor activities for the first time to those experienced in outdoor adventures. There is a cost for these outings,

which usually includes all major equipment needed for the activity, instructors and guides, food, and other needed supplies. If you are interested in hiking in the mountains, canoeing, kayaking, or dog sledding, this organization is worth checking out.

Exercise and Movement

You can decrease your stress and boost your concentration, energy, physical flexibility, strength, balance, and endurance by doing just 10 minutes of physical activity per day. Anything that gets you moving has benefits, and once you start to feel results, you may be motivated to add another 10-minute block of physical activity. You don't have to go to the gym or participate in a programmed activity, although these are good choices if you can take part in them. Some normal daily activities provide enough physical activity to improve your physical fitness, like digging in the garden, scrubbing the bathtub, walking up and down the stairs in your house, doing a few squats, or touching your toes next to your computer while you take a break. If you'd like a planned activity without going to the gym, try yoga or Pilates with "eyes-free fitness" audio instruction from Blind Alive

If your current lifestyle is mostly sedentary, it's important to talk with your doctor before beginning an exercise regimen. You will want to discuss your eye condition and physical condition because some exercises should be avoided if you have glaucoma or other retinal diseases.

Many YMCAs, YWCAs, hospitals, and other community organizations offer free or low-cost exercise programs for seniors. One national program that has become popular in recent years is called SilverSneakers, and other similar programs may be available in your local area.

Summary

In this lesson, we have discussed a variety of recreational activities. If you want to explore new ways to get moving or connect with an enjoyable recreational activity, you may be concerned that it's not possible for you with vision loss. Start small, try starting with just 10 minutes of exercise each day, reach out to a group of individuals who do the activity, or try applying some of the tips you have learned throughout these lessons, and keep reminding yourself that no matter your age, size, or physical condition, you need to start moving and participating in recreation again. Not only are exercise and healthy eating the most effective means of protecting your body against chronic diseases, but they are the primary ways to build a strong body and ensure a long, active life. Finding

meaningful activities will give you purpose and enjoyment in your life.

Suggested Activities

Identify a hobby you haven't tried since your vision loss and try to do it.

- Ask your local blindness agency or look online for information about doing a hobby you enjoy with a vision impairment.
- Identify an activity that some of your friends or family members enjoy doing together and join them in that activity.
- Join a local peer support group or chapter of the American Council of the Blind or National Federation of the Blind and see what activities other people who are blind or have low vision are doing.

Resources

- American Blind Bowling Association, Inc.
- American Council of the Blind
- Appalachian Mountain Club
- Audubon Society
- BARD
- Blind Alive
- Blind Golf
- Blind Outdoor Leisure Development (BOLD)
- The Hadley Institute
- Lions Clubs
- The National Beep Baseball Association
- National Federation of the Blind
- National Federation of the Blind-Newsline
- The National Library Service for the Blind and Print Disabled
- National Library Service for the Blind and Print Disabled Eligibility
- National Park Service
- Open Book
- SilverSneakers
- Ski for Light
- United States Association of Blind Athletes
- Wilderness Inquiry
- Woodworking for the Blind, Inc.

Lesson 18: Adjusting to Vision Loss One Day at a Time

Introduction

Vision loss changes a person's life in many ways. Most people who experience vision loss or a diagnosis of a visual condition that is considered permanent will experience emotional distress, including trauma, shock, anxiety, fear, denial, sadness, and even depression. In many regards, an individual who has a vision impairment goes through a grieving process. Some people go through an initial grief process and then reach a point of adjustment; however, new feelings of loss can arise when an experience occurs that reminds them of the implications of their vision loss.

You are encouraged to take charge of every area of your life as a person who is blind or has low vision. As you learn new adaptive skills and methods and how to use a variety of devices, you will gain confidence on the road to living with a visual impairment, one day at a time.

Through the lessons in this series, you have learned techniques for dealing with the effects of your visual impairment on tasks like reading and writing, cooking or preparing food, personal care, housekeeping, home repairs, traveling within your community, and relaxing and having fun. Although your new skills are helping you realize that vision loss isn't as limiting as it once may have seemed, you may still have times when you feel overwhelmed, worried, or depressed. Maybe your self-esteem and self-confidence are shaky. These feelings are a natural part of the coping and adjusting process. Everyone deals with their visual impairment with their unique personality, characteristics, abilities, and coping skills. And everyone works towards personally meaningful goals. The purpose of this lesson is to give you tools and resources to empower you to live every day as an individual who just happens to be visually impaired.

Lesson Goals

- Learn to better cope with the emotions that accompany vision loss.

- Plan ways your support team can help you with the adjustment to vision loss.

- Utilize activities toward healthy emotional growth.

Select a support group so you can share concerns with others who are losing their vision and those experienced in handling the challenges of vision loss.

Consider participation in a national consumer advocacy organization.

Actively meet the challenges faced by visually impaired people on all societal levels.

Develop communication skills to effectively advocate on your own behalf.

Adjusting to Life with Vision Loss

Each person adjusting to vision loss experiences different emotions, at different intensities, for different lengths of time. In time, most of your fears, disappointments, anger, and depression can be managed as you learn adaptive skills to be more in control of your daily activities and as you learn to live independently and cope with life with a visual impairment. However, some negative feelings may crop up again as new situations arise, and some may never go away. There may be special occasions or traditions you would like to see, like a grandchild on his first birthday. Your family may have enjoyed driving to look at holiday scenery, and now you cannot experience this fully. The sadness you experience with the loss of these visual experiences is normal and will likely lessen in intensity as time goes on, but it might never go away completely. You might find certain things embarrassing, like not recognizing someone you pass on the sidewalk or realizing you are talking to a blank space because the person you were talking to has walked away. Remember, even when you could see, you probably did some embarrassing and inadvertent things too.

The stages of adjustment don't occur and then disappear. They overlap and are often jumbled together. Just when you think you no longer have to deal with anger or depression, they come bursting through your door again. You feel like you can finally smile again, but then tears return. You laugh, but a cloud of depression drifts in once more. Don't beat yourself up. This is normal and necessary. It is part of healing, which can be painful.

Much has been written about adjusting to and coping with vision loss, such as *Self-Esteem, Adjusting with Blindness* (Tuttle & Tuttle, 2004). The authors describe "adjusting [to] blindness as the continuous process of adjusting to the daily demands of life with the added characteristic of vision loss." Low vision or blindness is not an external circumstance you finally "adjust to" at some point in time, like adjusting to a new job or new home.

It's the total person with all his or her attributes, including vision loss, who finds ways every day to deal with life's demands.

It is important to note that you have a choice of how you will react to your new challenges. If you work on learning adaptive skills, advocating for yourself, and regaining independence with a positive and proactive attitude, you will find you can cope very well as a person who is blind or visually impaired.

Your Support Team

You need to feel like an important, contributing member of your family and the other groups to which you belong. You need to feel valued by others so you can strengthen your self-esteem and self-confidence. The nucleus of your support team is made up of the people who have your back. They are your cheerleaders, willing to urge you on when you are hesitant or lack confidence. They can be family, friends, or coworkers. They are the people who will give you honest feedback when you need a big push but will give it in a way that lifts your spirits.

In the early stages of adjusting to vision loss, you need support that's balanced and not so helpful that you don't learn how to do things yourself. Help others understand your vision problems by telling them what you can do independently, what you need a little help to do, and what you need someone else to do. When you have gained some confidence, it is time for members of your support team to back off and allow you to apply what you have learned and exercise your independence. However, it is important to remember that there is nothing wrong with asking for and accepting help. Helen Keller said, "Alone we can do so little, together so much." There will be things you can no longer do and things where you could use some help. Figuring out how to balance independence and interdependence will help you feel more in control.

Healthy Emotional Adjustment

You might be a member of a group of newly visually impaired people who tend to memorialize their former sighted selves. It's easy to forget that your sighted self ever burned the toast, wore two different shoes to a business meeting, got on the wrong commuter train, or committed any other mistake or accident. Some people who have been visually impaired since birth wrongly think that sighted people rarely burn toast, never wear two different shoes to a meeting, and always correctly read signs for commuter trains. Too often, these misguided perceptions, along with social stigmas, prevent visually impaired people from recognizing that everyone—young or old,

blind or sighted—makes mistakes. Those misperceptions may hinder you from accepting and valuing your visually impaired self.

You may find it difficult to laugh at such situations if you are struggling to find your equilibrium and adjust to the demands of everyday life along with visual impairment. In time, you will realize one of the best therapies for learning to accept and value your visually impaired self is to laugh at your mistakes and to use humor to help sighted people relax if they are uncomfortable with your vision loss.

Another helpful activity might include reading books, especially biographies. These stories can inspire, encourage, teach, comfort, and counsel people about life's challenges. The nature of these books can be quite therapeutic, especially if the book addresses your specific problem or need. Talk to a Talking Book librarian about finding books on coping and adjusting and about people who have successfully navigated the challenges of vision loss.

Support Groups

Connecting with other people who are blind or have low vision can be of tremendous value. Support groups bring together people who share a similar life challenge, such as vision loss. Joining a support group may be one of the most important things you'll ever do. Whether it meets over the phone, online, or in the community, these groups offer opportunities to talk to other people who are losing their vision and people who are experienced in meeting the challenges of vision loss. Support groups can help you find solutions for your vision-related difficulties. You will meet people who can empathize with your frustrations, fears, disappointments, embarrassments, and tears because they have experienced similar feelings. You will hear how others have managed these feelings and found ways to successfully navigate life with a visual impairment. It may also be helpful for your family members or friends to participate in the support group from time to time.

Some groups are led by visually impaired people, and others are led by professionals who are independent living or orientation and mobility instructors, social workers, or nurses. The format of a group may include topical discussions, guest speakers, hands-on workshops, and demonstrations of products for people with vision loss. A support group can also be a great place to socialize and make lasting friendships.

National Consumer Advocacy Organizations

Along with joining a support group, consider joining one of the major visual impairment consumer advocacy organizations in the United States,

including the American Council of the Blind (ACB) and the National Federation of the Blind (NFB). These organizations strive to increase the independence, security, equality of opportunity, and quality of life for people of all ages who are blind or have low vision. They are available at the local, state, and national levels. Joining one of these organizations can offer many benefits, such as:

- Meeting and making friends with people who are blind or have low vision who share your profession, hobbies, interests, or goals.
- Finding hope and moving forward after vision loss.
- Accessing local and national networks of people who are blind or have low vision who can provide information and support about living, working, learning, and thriving as a visually impaired person.
- Advocating at local, state, and national levels to change misconceptions about blindness and policies and laws that affect people who are blind, low vision, or losing their vision.

These organizations are guided by the conviction that people who are blind or have low vision are fully capable of representing their own situations and needs. They are governed by people who are blind or have low vision but also encourage membership of sighted people—family members; friends; members of service organizations; and local, state, and national organizations—who will advocate for the organizations' core principles. These organizations have affiliate chapters in most states.

The Blinded Veterans Association is a nonprofit organization of veterans who are blind or have low vision. This organization provides information and referral services, regional groups, advocacy, and more. Call (844) 603-0145 or visit [Blind Veterans Association](#) to learn more and get connected.

The National Organization for Albinism and Hypopigmentation provides information and referral services, advocacy, and opportunities to connect with others with albinism. Visit [National Organization for Albinism and Hypopigmentation](#) for more information.

Hadley is an organization dedicated to providing free educational information and support to individuals who are blind and vision impaired. They run a variety of discussion groups where you can meet others with vision loss. Visit them at <https://hadleyhelps.org/> or call them at 800-323-4238 to connect with their services.

Self-Advocacy and Effective Communication

Self-advocacy means speaking and acting on your own behalf. There are

federal and state laws that protect your rights, and there are organizations that act on behalf of people who are blind or have low vision fighting against discrimination. Ultimately, living independently is your responsibility, and part of that is learning to advocate for yourself.

Individuals who are newly visually impaired may react passively or emotionally when encountering situations that are uncomfortable. At times, a significant other or family member may be allowed to do something for you that you know you can do yourself or want to do yourself. At other times, you may feel like you have been pushed around and get angry or act aggressively.

It is helpful to understand the differences between assertive, nonassertive, and aggressive behavior. People who are nonassertive allow others to choose for them and, unfortunately, seldom achieve their goals. At the other extreme are people so aggressive that they usually get their way, but at the expense of others.

On the other hand, being assertive means taking responsibility for what happens to you. Assertiveness enables you to make choices for yourself without giving others the power to do so. For example, how often in a doctor's office, restaurant, or store, has a staff person spoken to your sighted companion rather than directly to you? Do you speak up for yourself and communicate your desire to be treated as a competent equal, rather than as a nonperson? Or do you allow your companion to answer for you?

Here are suggestions to help you improve your ability to respond assertively instead of non-assertively or aggressively:

- Roleplay common situations you face with a family member, a person on your support team, or with a trained blindness professional.

- Introduce this topic at a support group meeting. Others in your group may also have difficulty speaking up for themselves. Perhaps you could roleplay with each other or invite a blindness professional to join a meeting and offer suggestions.

- Keep a journal of experiences you encounter that require you to be assertive. Take time to reflect on what you might have done differently or praise and reward yourself when you've been assertive.

Talk to family members or friends who regularly accompany you to medical appointments, restaurants, and on other outings. Ask them to defer to you if a doctor, waitress, or clerk speaks to them rather than directly to you.

In time you will become more confident and will feel more in control of situations you encounter. Learning and using verbal and nonverbal assertiveness and communication skills will enable you to move more confidently through the tasks of daily life.

Summary

Accepting vision loss is a journey and each person travels at their own pace along that path. To be self-accepting, you do not need to like blindness or low vision; however, you do need to internalize visual impairment as one of your many personal traits, like being male or female, tall or short, artistic or athletic, a teacher or an engineer, and, oh yes, visually impaired or sighted. Self-accepting people are those who have learned to accept all their traits, the strengths along with the limitations. They are at peace with themselves, comfortable with themselves, and they like themselves. They recognize that everyone has limitations, and limitations do not diminish a person's dignity and worth. You are not less because you are now blind or have low vision. This challenge will require you to be a better problem-solver and communicator and a more adaptable person.

Life can be as full and as rich as you choose. If you spend your time on the possibilities and opportunities, life can be full and satisfying. The possibilities of life as a person who is blind or has low vision are as numerous as you make them. Loss of vision presents many challenges, but with a positive and determined attitude, learning adaptive skills, proper support from loved ones and peers, training, and access to resources, you can not only adjust to life with a visual impairment but learn to thrive.

Suggested Activities

What positive and proactive strategies can you implement to learn to live and cope with your visual impairment? Here are some suggestions:

- Join a support group.
- Tell your support team, including family and friends, what you need help with and what you don't.
- Read books written by and about blind people who live meaningful lives despite vision loss.
- Connect to blindness services in your area.

- Learn the adaptive skills necessary to be more independent.

What positive strategies can you use to advocate for yourself? Here are some suggestions:

- Use humor to help sighted people relax when they seem uncomfortable.
- Speak up for yourself in an assertive, yet respectful way. Explain your needs calmly without giving away your power.

Resources

- Blinded Veterans Association
- American Council of the Blind
- National Federation of the Blind
- National Organization for Albinism and Hypopigmentation
- Hadley

Reference

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Lesson 19: Using Technology in Everyday Life: Adaptive Options

Introduction

As you have learned, vision loss requires learning new ways to do many things, from telling time to organizing your kitchen and pantry. This series of lessons has covered many useful strategies, like putting a rubber band around a blood pressure pill bottle so you can distinguish it from ulcer medication or pinning socks together before tossing them in the hamper so they'll still be together after laundering.

Computers, smartphones, virtual assistants, and other digital technologies can also improve your independence and quality of life. This lesson will discuss a range of mainstream and adaptive technologies that help people who are blind or have low vision with many daily tasks. Assistive or adaptive technologies, hardware, and software that allow access to computers or touchscreen mobile devices will also be discussed.

Lesson Goals

- Find out how you can use assistive technology in everyday life
- Gain familiarity with mainstream and adaptive technology
- Learn about options for making a computer accessible
- Learn tips for mobile device accessibility
- Learn about smartphone apps that are made specifically for people who are blind or have low vision
- Learn about mainstream products that can increase your independence

Technology is an ever-evolving field, so it is important to keep up with new products and iterations of assistive technology. This lesson can only provide information on a few rapidly changing software and hardware options.

Assistive Technology in Daily Life

Assistive technology can feel like an overwhelming subject, but don't despair—you don't need to learn everything at once! Here are a few recommendations for how you can use technology to improve your daily life:

- Wake up to the sound or vibration of an accessible alarm clock
- Take the correct medication with the help of a talking prescription bottle, such as ScripTalk, or other devices that can identify your medication and remind you to take it
- Keep up with the world through text-to-speech or magnification software on your computer or cell phone. Try using the existing accessibility features on your computer, like screen readers and screen magnifiers.
- If you are heading out of your home and need directions, try an accessible GPS to go with your mobility cane, or use Google or Apple maps on your smartphone.
- View your bills and other mail with the optical character recognition features available through a KNFB reader or the Seeing AI app for your smartphone.
- Get help reading labels on canned goods using the free Seeing AI app or the Aira or Be My Eyes apps for the iPhone to connect to Seeing AI, a network of volunteers. The Aira and Be My Eyes apps use your device's camera to initiate a video session with a volunteer who can look through your phone and help you do tasks like

identifying which can of food you want, sort mail, or check for spots on clothing.

- When you want to relax, try using a device like the illuminated Big Button Remote to channel surf. You may also wish to ask your cable provider if they offer voice-controlled remotes or voice menu services. You can also try using an audio description, where a narrator describes a program's action. If you go out to a movie, many movie theaters offer special headsets on request that play an audio description of the movie. Visit American Council of the Blind for a list of available audio-described shows and movies. Streaming services like Apple, Amazon, and Netflix also offer some audio-described movies and programs. Try turning on the secondary audio program (S, on your television to access audio-described programming.
- Use a virtual assistant, such as the Amazon Echo, to set a timer when preparing a meal or to play your favorite music.

Information for the Computer Novice

If you don't regularly use a computer, you may feel like there isn't a point in starting now. What you may not realize is that, with the help of a few pieces of software, computers can give you access to a huge range of information, services, and tasks that might otherwise be more complicated or time-consuming to find or get done. If you cannot access computer training at a vision rehabilitation agency, local libraries or adult education departments may offer classes.

It is important for people who are blind or have low vision to understand the keyboard, so learning to touch type is very useful. Learning good keyboarding skills will significantly reduce your frustration as you use a computer. Large print adhesive labels that have letters and numbers for computer keyboards are available, as are adapted keyboards that have large letters and contrasting colors.

Adaptive Software for Standard PC or Mac Computers

Built-In Color and Contrast Options: Windows

If you only need a bit of help to use a computer, try this tip on a Windows computer: Press the Windows key and the letter U at the same time. This will summon the Microsoft Ease of Access Center, where you can adjust your computer's color and contrast options.

Built-In Magnification Options: Windows

Consider turning on the Windows Magnifier, which can also be found in the Ease of Access Center (see above). Windows Magnifier offers three different ways to enlarge the screen. You can press the Windows + key combination to increase magnification and Windows - (minus) key to reduce it. You can also use Magnifier's "Zoom" control or the Windows + to magnify the contents displayed on the screen up to 16 times.

Whenever you start Magnifier, the program's toolbar appears briefly, then gets out of your way. You can summon it again by clicking the magnifying glass icon on your screen or the Magnifier icon on your computer's taskbar.

Accessibility Options: Apple

To find the accessibility options on Apple computers, press Command + Option + F5. This command will bring up the complete list of accessibility options for OS X, including color, contrast, magnification, and VoiceOver options.

Web Browsing with Magnification

If you browse the Internet using a screen magnifier, there are a few settings that can increase your enjoyment and productivity online. In most browsers, the F11 key will toggle you from normal view to full-screen. In full-screen view, all menu bars and other icons that can be distracting are hidden. Also, in the View menu of most browsers, there is a "zoom" button that allows you to enlarge the webpage you're viewing. If you are using a mouse, the Control and the scroll wheel on the mouse can be shrunk and enlarged in Internet Explorer.

Screen Readers: Windows

You can have your Windows PC read text, menus, and other controls aloud using the Narrator screen reader. To launch Narrator, press Control + the Windows key + the Enter key at the same time.

Another free screen reader option is NV Access, which stands for nonvisual desktop access. This program is available as a free download.

Browsing the Web with a Screen Reader

Just as print documents can be structured with headings, bulleted lists, and text blocks, websites have structure, and screen readers make use of this. Unlike print documents, webpages also have interactive content. There are many types of elements on a webpage, like headings, lists, graphics, and links. The most basic way to navigate a web page while using a screen reader is with the up and down arrow keys. This moves the focus to each element on the page in order, including non-interactive text.

The Tab key moves the computer's focus between interactive elements, like links and buttons, but it usually skips over bulk text elements. A good strategy for reading a new webpage is to jump through the headings to get a feel for its structure. On a webpage, pressing the H key by itself will move to the next heading. You can also navigate to the next link by pressing the K key. Holding Shift will move you backward. You can activate a link by pressing the Spacebar on the keyboard. This will either take you to a new page or a different part of your current page.

With these basic commands, you can read a webpage quite effectively. A good way to navigate a webpage is to scan the page by heading and then use the up and down arrow keys to locate topics of interest.

Each screen reader has specialized commands that you will need to learn. Suppose you are learning to use a screen reader for the first time. In that case, it is a good idea to seek assistive technology training because screen reader software can be challenging to navigate and learn without some instruction or mentoring. Contact the local, state, or private agencies that provide vision rehabilitation training and ask about screen reader software training.

Using Mobile Technology: Cell Phones, Smartphones, and Tablets

Smartphones are incredibly helpful tools for people who are blind or have low vision. These devices allow you to make phone calls and identify currency, objects, or items, find the closest bus stop and get voiced directions to its location and identify colors and money when out shopping. As with desktop and laptop computers, screen readers and screen magnifiers can help you access mobile devices.

Tips for Using a Touch Screen Mobile Device

When sighted people use a touch screen smartphone or tablet, they tap icons or slide a finger across the display to make things happen. But what if you cannot see the icons clearly enough, or not at all?

Both iPhones and Android smartphones include two built-in accessibility features: a screen magnifier and a touch screen reader. The built-in smartphone magnifiers magnify the screen and use large fonts, enhanced contrast, alternate color schemes, and other techniques to make it easier to see.

The built-in touch screen readers use human-sounding, synthesized voices to read and review the screen, much like Narrator for Windows or VoiceOver for Mac. However, unlike those screen readers, which use keyboard commands to navigate a page or site, smartphone screen

readers use special touch gestures to get the job done. It might mean double-tapping rather than a single tap to access an app.

For iPhone, iPad, and the iPod touch, the screen reader, is called VoiceOver for iOS. On Android phones, the touch screen reader is called TalkBack. Windows touch screen tablets can also be accessed using magnification and the Narrator screen reader. Below are some Apple-specific directions, but most of these work the same for Android devices.

Mobile Device Screen Readers

Regardless of the brand or style of mobile device, a common feature is a smooth glass display, called a touchscreen, that responds to tactile input. An on screen keyboard is another common way to enter or edit text on mobile devices. "VoiceOver" and "text-to-speech" are terms for software programs that convert text displayed on the screen of a mobile device to audio output, making it possible for people with visual or learning impairments to access these devices.

The VoiceOver Screen Reader for Apple Mobile Devices

The easiest way to turn on VoiceOver is to ask the Siri digital assistant to do it for you. Siri can perform many tasks, like telling the time, making phone calls, sending a text, and opening apps. Try using Siri to find out what is possible with just the sound of your voice.

Depending on your iPhone, to use VoiceOver, you might need to press and hold the Home button, which is the round button beneath the screen on your device. When you hear the beep, say, "Turn on VoiceOver." For iPhones without a home button, press the lock button on the right side of the phone and say, "Turn on VoiceOver." You can also turn VoiceOver off by instructing Siri, "Turn VoiceOver off."

With VoiceOver turned on, touch the display in different places to hear the names of icons or text snippets.

To effectively use the Apple VoiceOver screen reader on the iPhone or iPad, you must learn how to move around or navigate the text or apps installed on your device. There is a built-in tutorial, and you can also access VOStarter to practice navigating a smartphone.

iOS Gestures

Gestures are the movements you make with your fingertips on the surface of a mobile device's touch screen to control what the device does and learn about what is displayed on the screen. Below are descriptions of some of

the most commonly used gestures for the Apple mobile operating system called "iOS."

Swipe Gesture

To swipe, touch the screen with your fingertip or fingertips and smoothly swipe either up, down, left, or right. Keep your fingers slightly separated when swiping with multiple fingers. Try exploring what is on the screen by starting toward the upper left-hand corner, just as you would if reading a page of text. Use a one-finger swipe to the right to listen to all the apps or other items on the screen.

Additional Swipe Gestures

- One-finger swipe right or left: selects the next or previous item that gains focus
- One-finger swipe up or down: gives choices depending on the rotor setting (see below)
- Two-finger swipe up: reads all content, from the top of the screen to the end of the page
- Two-finger swipe down: reads all content, from the current position to the end of the page
- Three-finger swipe up: moves down the page
- Three-finger swipe down: moves up the page
- Three-finger swipe left: moves forward one page
- Three-finger swipe right: moves back one page
- Tap Gesture: this gesture is a quick tap with one or more fingers. Again, when multiple fingers are required, be sure to separate your fingers slightly. You will also need to make the tap quickly to keep this gesture differentiated from the tap-and-hold gesture covered below.

Here are some gestures that use a tap:

- One-finger double-tap: activates the item that has the focus
- Two-finger single tap: starts or stops audio or the current item being read aloud
- Two-finger double-tap: when the focus is in an edit box, starts dictation feature; another two-finger double-tap ends the dictation feature
- Three-finger single tap: tells what is currently visible on the screen and its position
- Three-finger double-tap: turns VoiceOver off or on
- Three-finger triple-tap: turns Screen Curtain off or on

- Four-finger tap at the top of the screen: focus goes to the first element on the page
- Four-finger tap at the bottom of the screen: focus goes to the last item on the screen
- Four-finger double-tap: turns on or off VoiceOver help

Tap-and-Hold Gesture

This gesture requires that you not remove your finger(s) at the end of the final tap. This gesture is often used when you want to rename a tab, button, or app. A two-finger double tap-and-hold brings up an edit box where you can type a new name.

Scrub Gesture

Place two fingers, slightly separated, on the screen, and draw the letter "Z." This gesture allows you to dismiss a notification or go back one screen.

Flick Gesture

The flick gesture is typically used when you are given choices from a list or a spin selector that contains days or numbers. The flick is done as if you are using your finger to flick something off the device's screen.

iOS Rotor

The rotor contains a list of choices, depending on the app you are using. To use the rotor, make sure VoiceOver is enabled, then place two fingers on the screen and rotate them as if turning a dial. Lift your fingers when the feature you desire is announced.

Hints

When using gestures to navigate mobile devices, you may hear VoiceOver speak additional information or choices. Listen to the hint to learn the gesture that is needed to complete or start a task.

Practice Mode

Another great way to learn VoiceOver gestures is by double-tapping the screen with all four fingers. This summons VoiceOver's Practice Mode. The iPhone or iPad will now speak the function of any gesture performed. When you're done practicing, press the Home button once to exit Practice Mode.

Using the Onscreen Keyboard

When you double-tap a text-entry field, the iPhone's onscreen keyboard appears on the bottom half of the screen. You can explore the keyboard using one of three methods:

- Lightly touch the screen in various locations. This is known as exploring by touch.
- Slide a finger across the bottom half of the screen until the various keyboard characters are spoken.
- Swipe across the onscreen keyboard using either left or right one-finger swipes.

Notice that the letters are in the same locations as on most standard hardware keyboards. When you find the key you want, double-tap anywhere on the screen—it's that simple.

At first, typing on a touchscreen virtual keyboard can seem daunting. Keep practicing, though. Eventually, things will click, and you will be ready for the iPhone's touch-typing mode. Using the touch-typing mode, all you need to do is find the key you want to enter. The simple act of lifting your finger causes the character to be entered into an email or text. Of course, you can also tap the dictate button to dictate a message or email.

Getting Help with iOS and Android Accessibility

Apple provides support for Mac computers and users of iPhone and iPad accessibility products. You can reach tech support via email at accessibility@apple.com. In the US, you can also reach them by phone between 8 a.m. and 8 p.m. by calling (877) 204-3930. For Android support, visit [Android Accessibility](#).

Virtual Assistants

Virtual assistants, like the Amazon Echo and the Google Assistant, are very popular. These easy-to-use, voice-activated devices can answer questions and perform skills, like telling the time and weather in a specific location, playing music and books, playing games like trivia, setting alarms and timers, and making lists.

Additional Resources

AccessWorld, a monthly online publication from the American Foundation for the Blind, holds a wealth of information about access technology, including information about smartphones, household appliances, online gaming, navigation and identification apps, and more.

AFB *AccessWorld* also offers articles on using technology in everyday life. It covers social media, online shopping, and banking, using technology for reading, entertainment, prescription management, accessible identification systems, selecting home appliances, and using GPS.

Hadley also offers many podcasts and courses on using assistive technology.

Accessible Computers

Inexpensive Computers

Suppose your finances do not allow you to buy a new computer. In that case, you may be able to buy a refurbished Windows desktop or laptop computer that comes preconfigured with a screen reader, screen magnification software, and other essential software. These affordable, accessible computers are provided at cost by Texas-based [Computers for the Blind](#) is a volunteer organization that has provided over 6,000 accessible computers to people who are blind or have low vision across the US. They can be reached by email at info@computersfortheblind.net or by phone at (214)340-6328.

Summary

Technology is always changing, so it is important to keep up with changes and new options for accessibility. More and more mainstream, affordable options are becoming available. Check with your local agency for the blind or local independent living or vision rehabilitation agency to find out more about current technology and training.

Suggested Activities

Make a list of the technology you currently have and the tasks you can use your technology to perform.

If you have a smartphone, try the built-in tutorial. On Apple devices, this is called VOStarter. Practice navigating the apps and screen.

If you are interested in building your technology skills, contact your local agency for the blind, an adult education center, or your library to determine what training is available in your area.

Resources

High contrast computer keyboards/large print keyboard stickers, accessible clocks, medication reminders, large button remotes, etc. can be found at:

- MaxiAids
- LS&S Products
- Independent Living Aids

Helpful Resources

A compiled list of helpful resources is provided below. To access the links to each resource, please scan the QR code below.



Services

1. National Library Service (NLS) is a free braille and talking book library service for people with temporary or permanent low vision, blindness, or a physical disability that prevents them from reading or holding the printed page. NLS circulates books and magazines in braille, large print, or audio formats through a national network of cooperating libraries, delivered by postage-free mail or instantly downloadable. Call Toll-free: 1-800-424-8567 or visit National Library Service (NLS) for more information.
2. Apple provides support for Mac computers and users of iPhone and iPad accessibility products. You can reach them via email at accessibility@apple.com. In the US, you can also reach them by phone from 8 a.m.- 8 p.m. at (877) 204-3930.
3. Hadley Institute for the Blind – online courses and discussion groups. Call (847) 446-8111
4. NFB-NEWSLINE is a free audio news service for anyone who is blind, low-vision, deafblind, or otherwise print-disabled that offers access to more than 500 publications, emergency weather alerts, job listings, and more. (888) 882-1629.
5. Well Connected is a phone-based outreach community for isolated, homebound seniors and visually impaired and disabled adults. Enrichment, entertainment, encouragement, and support groups are offered over the phone at no cost. Support groups are offered for blind and low vision, grief, diabetes, chronic pain, and more. (877)797-7299.

6. GoGo Grandparent is a company that connects people with ride-sharing programs like Uber and Lyft. It allows people who are not able or comfortable with using a smartphone themselves to request a ride. The person sets up an account with GoGo Grandparent and then calls the customer service number to request rides. The cost is minimal, and they can set up notifications to a family member or caregiver for an additional safety precaution. (855) 464-6872 or (855) GOGO-USA

Consumer Organizations

1. American Council of the Blind- is a nonprofit organization working to increase the independence, security, equality of opportunity, and quality of life for all blind and visually impaired people. Phone: (202) 467-5081.
2. The Blinded Veterans Association (BVA) supports Blinded Veterans with Veterans Assistance Programs. They offer a range of veteran assistance programs that are available to any veteran whether they are a member of BVA or not. They provide support for veterans through funding, advocacy, and assistance with navigating the Department of Veterans Affairs claims processes to ensure seamless integration. Phone: (202) 371-8880
3. National Federation of the Blind is a national, voluntary, non-profit organization dedicated to providing information and support to individuals who are blind, their families, and professionals, ensuring complete integration of the blind into society. Phone: (401) 659-9314
4. National Organization for Albinism and Hypopigmentation is a nonprofit organization providing accurate information and support for people with albinism and their families.

Products

1. Blind Mice Mart – sells adaptive aids and products. Also hosts a collection of descriptive movies and the “Cooking in the Dark” podcast.
2. Click Rule - for accurate tactile measuring, typically used by vision impaired woodworkers
3. Enhanced Vision – Sells a variety of video magnifiers, also known as CCTVs.
4. eSight Eyewear

5. Humanware sells various video magnifiers, also called CCTVs, the Victor Stream, a specialized MP3 player and recorder, and refreshable braille devices.
6. iBill - for identification of US paper currency is provided for free by the National Library Service
7. Independent Living Aids is an online store that sells products for people who are blind or visually impaired. Phone: (800) 537-2118
8. LS&S Products specializes in products for the blind, visually impaired, deaf, and hard of hearing. Here you will find a great collection of low vision aids, hearing helpers, daily living aids, and information designed to help you or a loved one regain independence.
9. MaxiAids is a company that specializes in products for people with disabilities. Many of the products described in our courses can be purchase through the online store or by phone. Phone: (800) 522-6294
10. NuEyes – magnification and AI glasses for individuals with visual impairments and the medical community.
11. NVDA - NV Access- free screen reading software for Windows computers.
12. PENfriend – audio labeling system for recording customized audio labels.
13. ScriptTalk, a ScripTalk station or app, is available for free and can read aloud prescription labels.
14. Vispero- sells adaptive software, video magnifiers, also known as CCTVs, and refreshable braille devices.
15. WayAround is a labeling and identification product for people with visual impairments. It connects WayTags to an app on a smartphone to record audio labels for clothes, documents, food, and other items.

Apps

1. Seeing AI is a free app for iPhones and iPads, which converts text and images to speech. It can read typed text, handwriting, barcodes, money, color, and identify people by facial recognition.
2. Envision AI is an app for iPhones and Android, which converts text and images to speech. It requires a paid subscription but offers a free trial. It has many of the same features as Seeing AI and is a good option for Android phones.

3. Be My Eyes is a free smartphone app that connects blind or visually impaired people to a volunteer to assist with reading or identification tasks.
4. Aira is an app that links visually impaired customers with a trained representative to assist with tasks remotely. Although some locations/businesses/tasks have been prepaid for customers of the business or product to use this service, it requires a paid subscription.
5. Meta Glasses by Ray-Ban offers AI text reading, description, and face recognition features through Meta AI, a conversational assistant that you can prompt by simply saying, "Hey, Meta."
6. BARD- The Braille and Audio Reading Download website and app allow users of the National library service to access books independently. The app is available for a variety of devices. The website can be used to search for and download books, accessed on the talking book player, a refreshable braille device, or a specialized audio player.

Recreation and Leisure

1. American Blind Bowling Association, Inc.
2. Appalachian Mountain Club
3. Audubon Society
4. Blind Alive
5. Blind Golf
6. Blind Outdoor Leisure Development (BOLD)
7. The National Beep Baseball Association
8. National Park Service
9. Open Book
10. Ski for Light
11. United States Association of Blind Athletes
12. Wilderness Inquiry
13. Woodworking for the Blind, Inc.

Helpful Information

1. Independent Living for Older Individuals who are Blind Technical Assistance Center (IL OIB-TAC) - a grant-funded center that provides technical assistance and information and referral services. Visit their website to find services in your local area.

2. Lions Clubs- This service organization has as one of its focuses blindness and low vision. Some clubs may help residents to purchase assistive technology, medical treatment, or services.
3. APH Connect Center is a website hosted by the American Printing House for the Blind for adults new to vision loss. Find services, resources, support, devices, and information. The main sections include Eye Conditions, Emotional Support, Everyday Living, Working Life For Seniors, and more. It also has a national directory of services for the blind and visually impaired.
4. AFB AccessWorld is an online publication that provides news and reviews of products and services. AFB AccessWorld is an excellent place to look for information on the accessibility of appliances and mainstream products.
5. AFB 2020 Senior Solutions-this article provides several low-tech options for basic home tasks.
6. An Overview of Home Appliance Accessibility- this article is an example of the product reviews available from AccessWorld. Be sure to use the most up-to-date version.
7. Making Voice Assistance Smart for Seniors- this article describes how seniors can use smart home devices with visual impairments.