

Part Two

Essential Tips for First-Time Users of Magnifying Glasses

Individuals with macular degeneration may encounter challenges when they begin using a magnifying glass for reading, particularly because their visual acuity differs between eyes; one eye may have been dominant in the past. If the dominant eye has sustained more damage, the brain may still attempt to integrate input from both eyes as it did before, leading to frustration and difficulty reading.

To adapt to these changes, some individuals might find it helpful to close or cover the eye with poorer vision or to hold the magnifying glass in front of the eye with better vision while reading. This transition can be difficult because forming new habits takes time, and the brain may continue trying to merge inputs from both eyes, leading to frustration.

When individuals struggle to read small print, they typically search for a suitable magnifying glass and may turn to the Internet. They often see magnification numbers like 2X or 3X and assume larger magnifiers will cover a larger area, making reading easier. The larger the lens, however, the weaker the magnification. This concept is not often well understood

However, some manufacturers, particularly those from China and other regions, may label their products with magnification numbers like 3X, which may not be accurate. Incorrect labeling can make it difficult to know precisely what you are purchasing, leading to frustration due to misleading information about magnifying lenses.

The true strength of a lens is measured in diopters. Measurements like 2X or 3X may only serve as rough estimates and lack precision. A diopter chart that displays the actual lens power, such as +8.00, can be helpful, as shown in the example below. If the measurement does not specify diopters, it is difficult to determine the lens's true strength. Using diopters is a more accurate method.

For example, a +8.00 lens magnifies the print to three times its original size (3X), while a +12.00 lens magnifies it to four times its original size (4X). A +16.00 lens can make the image five times larger (5X), and so on. Additionally, the best magnifiers feature built-in illumination, with LED bulbs

being ideal since they do not burn out and consume less battery power. Most illuminated magnifiers come with LED illumination.

It's essential to note that stronger magnifying lenses typically have a smaller diameter, which may not provide sufficient coverage for reading larger areas. While these smaller lenses may be less effective at covering a wide area, selecting the correct magnification can be challenging when browsing catalogs or the web. Therefore, consulting with a low vision specialist is advisable to find the most appropriate lens for one's vision.

Moreover, the diopter chart also indicates the focal distance for each lens. Optimal magnification occurs at a specific distance from the reading material. As the lens is moved closer to or further from the page, there is a point at which its magnifying power is most effective. The lens's strength determines how close it must be held to the page to achieve the best performance.

Another critical principle is holding the magnifying lens closer to the eye to increase the field of view. By positioning the lens nearer to the eye, a larger area becomes visible. Holding the lens much closer to the better-seeing eye can be a difficult adjustment at first.

While this adjustment can be significant for those unaccustomed to holding the magnifying glass just a few inches from their face, experienced users recognize the importance and the increased ease of reading that comes with this technique. However, mastering this method may require weeks or months of practice to become comfortable with it.

To enhance readability, placing reading material on a clipboard helps keep it flat and more manageable. While stronger magnifiers might not be suitable for reading books, they are highly beneficial for reading mail, magazine articles, or bulletins from churches or organizations. They are also ideal for tasks such as reading pill bottles, food labels, price tags, and restaurant menus.

These magnifiers are specialized tools useful in specific situations, and individuals with macular degeneration often use multiple magnifying aids depending on their needs. For example, some individuals may opt for a weaker magnifier to read large-print text or sign a check.

Some individuals choose to use a stand magnifier at home on their desk, complemented by a handheld magnifier with illumination for outings to restaurants or shopping trips. The stand magnifier rests directly on the reading material, making it an ideal option for those with a slight tremor. The lens's focal distance is preset, making it easier to use than a handheld magnifier. A wide variety of options are available, making it essential to seek education through a low vision clinic or practitioner to understand all the available options.

The following chart may seem complex when trying to understand how magnification works. Commonly, magnification is expressed in layman's terms as 2X or 3X, which means making the print two times larger than usual or three times larger than normal. As mentioned earlier, the viewing area decreases in size as the power increases.

You may be familiar with the term "diopter" when choosing reading glasses, which are often labeled as +1.50 or +2.00 diopters. Most reading glasses available at stores typically have a maximum strength of +3.00. However, stronger magnifiers, not commonly sold in retail settings, usually start at +8.00, equivalent to 3X magnification.

To obtain the most accurate measurement of a lens power, refer to this chart to determine the strength of a lens by its diopter rating.

Diopter Chart

Diopters	Magnification	Focal Distance	
+4.00.	2X.	10 in.	
+6.00.	2.5X.	6.66 in.	
+8.00.	3X.	5 in.	
+10.00.	3.5X.	4 in.	
+12.00.	4X.	3.33 in.	
+16.00.	5X.	2.5 in.	Bring it closer to your eye
+20.00.	6X.	2 in.	Bring it closer to your eye
+24.00.	7X.	1.66 in.	Bring it closer to your eye
+28.00.	8X.	1.42 in.	Bring it closer to your eye
+32.00.	9X.	1.25 in.	Bring it closer to your eye
+36.00.	10X.	1.11 in.	Very close to your eye
+40.00.	11X.	1 in.	Very close to your eye
+44.00.	12X.	.90 in.	Very close to your eye
+56.00.	14X.	.71 in.	Very close to your eye

Why A Larger Television Isn't Always the Answer

Many individuals and families opt for large televisions for those with low vision, but the improvement in viewing experience is often minimal. It is generally recommended to sit closer to a smaller screen for better visibility. One way to evaluate this is to visit a retailer and stand close to screens of various sizes. This exercise will help you determine which television size works best for your vision.

Most people do not have comfortable seating that allows them to sit close to the television for optimal viewing. Consider using a rolling chair so you can sit near the screen for your favorite shows without rearranging your furniture.

Another way to enhance your vision is to position yourself so that your better eye is emphasized. This adjustment can significantly improve visual clarity in daily tasks. For instance, if your left eye is your better-seeing eye, try angling your chair so that your left eye is closer to the screen, while your right eye is turned away from it.

Sitting at an angle has the added advantage of engaging your peripheral vision, which can help minimize the impact of a central blind spot. By experimenting with different viewing angles, you may discover the optimal position that maximizes your vision, even if you have a significant central blind spot.

Your brain, which typically prefers to use both eyes together, may need some time to adjust to this new approach. By focusing on the better-seeing eye, you can retrain your brain to stop relying on both eyes simultaneously, thereby optimizing vision from the stronger eye. Over the course of weeks and months, you may notice a gradual improvement in your functional vision.

Individuals facing vision difficulties must explore strategies that work best for them. This might involve covering one eye or using magnifying tools, especially those designed for television viewing. Many find it advantageous to seek guidance from a low vision specialist, who can recommend the best visual aids and techniques for everyday activities, including watching television. Patience and determination are key to adapting to changes in vision caused by macular degeneration.

Additional support for developing low vision skills may come from occupational therapists with specialized training in this area. They can offer valuable guidance on improving functional vision and may recommend specific devices from a low-vision optometrist. Consistent practice is essential for reprogramming the brain to adopt new habits.

Individuals can enhance their functional vision by incorporating these strategies into various activities and tasks. It is important to remain persistent and not be discouraged by initial slow progress. With dedication and regular practice, positive changes in visual adaptation can be achieved, ultimately improving overall quality of life.

Were You Told That New Prescription Glasses Won't Make a Difference?

Conventional prescription glasses are designed to address refractive errors such as nearsightedness, farsightedness, and astigmatism. Yet, a new prescription may not greatly enhance visual acuity for many people with macular degeneration.

One explanation for this concept is that prescription glasses align light precisely on the central area of the retina, known as the macula. Since the retina can be likened to a movie screen at the back of the eye, it may have a blind spot or damaged area. Therefore, even if the glasses accurately focus on the correct place, a missing central location on the "screen" may still prevent improvement.

Due to this limitation, individuals with more advanced macular degeneration are frequently advised that regular glasses may not be effective. Nonetheless, several factors should be considered for those accustomed to wearing glasses. For instance, if someone has not updated their prescription in several years, having the doctor conduct a refraction for glasses may be worthwhile to determine if there could be a slight improvement.

Glasses can be costly, and if the improvement in vision is minimal—such as just 5% or 10%—many people may decide against getting a new prescription. However, it's essential to consider that wearing glasses also

provides eye protection and safety. For example, if debris flies up and strikes your eyes, glasses can help shield them from injury.

Wearing glasses is particularly relevant for individuals who enjoy gardening, as they could be at risk of being poked in the eye by branches or shrubs. Additionally, most glasses block 100% of harmful ultraviolet (UV) light, which can exacerbate the progression of macular degeneration.

When adjusting the strength of the reading portion of glasses, proceed with caution. Factors such as the individual's overall eye health, specific prescription needs, and lifestyle should all be considered to ensure the best results. It is essential to recognize that as the strength of bifocal, trifocal, or progressive lenses increases, the focal point also shifts closer to the eye. This means that with stronger lenses, you must position objects nearer to see them. The greater the lens strength, the closer you must bring the object for optimal focus.

This can be challenging for some individuals, particularly those new to those with macular degeneration, where central vision is affected. It's essential to work closely with your eye care provider when adjusting the strength of your lenses to strike a balance between vision improvement and comfortable viewing distances for your daily activities.

Another option is to consider acquiring a separate pair of glasses specifically for reading. Many individuals opt to try reading glasses available at drugstores, which typically range in strength from +1.50 to +3.00. It's essential to remember that as magnification increases, the reading material must be held closer to achieve focus.

People with macular degeneration might need a magnification greater than +3.00 to clearly read small print. Additionally, most bifocal lenses can only be prescribed up to +3.50. For prescriptions stronger than this limit, it is advisable to seek the expertise of a low vision optometrist who has specialized training and can offer valuable assistance in obtaining stronger reading prescriptions for different tasks. Stronger lenses, however, may require training again, often, and adjustment, which can sometimes be difficult.

Sunglasses

A pair of prescription sunglasses designed to meet your specific needs can offer numerous advantages, mainly when you are outdoors. These

sunglasses provide personalized vision correction while protecting your eyes from harmful UV rays, bright sunlight, and glare.

Some individuals with vision impairments may find that standard sunglasses are too dark, hindering their ability to see clearly. In such cases, discussing lighter tint options with your optician is important. Tints like amber lenses are popular for enhancing contrast and improving visibility in outdoor settings. These tints can aid in color recognition and reduce glare, which is especially beneficial for individuals with conditions such as macular degeneration.

By collaborating with your optician to choose the appropriate tint and lens characteristics for your prescription sunglasses, you can enhance both your vision and comfort while enjoying outdoor activities. Be sure to communicate your specific needs and concerns to ensure that your prescription sunglasses are tailored to improve your visual experience.

Additionally, opting for specialized sunglasses designed to fit-over your regular glasses can be a practical and cost-effective way to enhance eye protection outdoors. These fit-over sunglasses often feature added side shields for increased coverage, protecting your eyes from light and glare coming from various angles.

Even for those who do not require prescription glasses, fit-over style sunglasses can offer extra protection by effectively blocking out light and glare. Many people find it helpful to have multiple pairs of fit-over sunglasses with various tint options, such as lighter tints for indoor use or overcast days, and darker shades for outdoor activities.

Adjusting the tint based on weather conditions can also enhance vision and overall comfort. Many low vision centers are well-equipped with a broader variety of glasses. It is advisable to ask your ophthalmologist for a referral to a low vision service or to search for low vision clinics in your state or province.

Suppose you or someone you know is living with macular degeneration and facing challenges with central vision. In that case, consulting with an eye care professional specializing in low vision is essential. They can help explore suitable low vision aids and strategies tailored to individual needs. These specialized tools can significantly enhance the quality of life and

help individuals with macular degeneration optimize their remaining vision for various tasks and activities.

What is Eccentric Viewing, and How Will It Help Me?

For individuals with end-stage or advanced macular degeneration in both eyes, it is essential to learn to divert their gaze away from the central blind spot, known as a scotoma. This technique, referred to as eccentric or off-center viewing, can significantly improve visual function over time but requires consistent practice and dedication. Daily practice is essential for those who are just starting to learn this skill, and proficiency may take several months to develop.

The process begins with systematic exercises that involve looking up, down, or to the side, like reading the face of a clock. By practicing shifting their gaze to various positions, individuals can identify which position provides the clearest image. Some may find more than one effective off-center viewing position, highlighting the importance of ongoing practice to enhance this skill effectively.

When practicing eccentric viewing, it is crucial to move the eyes rather than the head. Slow and deliberate eye movements are key, requiring patience and consistent effort. A helpful exercise is to shift the gaze while seated and focusing on objects across the room to find the optimal viewing direction. Similarly, individuals can practice by examining nearby items, such as a coin or a pill on the table, refining their off-center viewing skills.

Another important aspect is learning to maintain and hold the new position for extended periods. Many may only be able to sustain the off-center gaze for a few seconds before their eye naturally returns to the center. You may notice that letters or words suddenly shift or jump around, which is a typical phenomenon. Overcoming this tendency requires time and practice, as well as remembering to move the eyes rather than the head during these exercises.

The goal is to maintain the eccentric gaze for a sufficient duration to complete specific tasks. For instance, pouring hot water into a teacup may require holding the eye at an eccentric viewing position for 20 to 30 seconds. Regular practice is essential to minimize risks, such as spilling hot liquid, if the eye shifts back to the central blind spot too early. Eccentric

viewing practice primarily aims to hold the off-center position long enough to perform the task at hand effectively.

For individuals with a significant blind spot in one eye and a smaller one in the other, the brain tends to prioritize the eye with better vision, making it more challenging to master eccentric viewing. When only one eye is significantly affected, individuals may not perceive the blind spot, and centric viewing may not be possible.

For those who have difficulty understanding the concept or locating their blind spot, an alternative method is to focus on a target ten feet away, such as a large black letter or number against a white background. Individuals can enhance their awareness and control over their eye movements by intentionally moving their eyes to optimize the view and then returning them to the center to obscure the view.

This approach clearly explains how minor adjustments can positively impact visual perception, helping to determine the optimal eye position for achieving the best results. Practicing gradual eye movements is critical for achieving a clearer view. Aim to practice two or three times a day, focusing on 10 minutes at a time, for optimal outcomes. Skipping several days or weeks of practice may result in a regression of improved function, so persistence is essential.

This skill can also be applied to the use of low-vision devices. For example, individuals can practice redirecting their gaze away from the central point while using a magnifying glass to identify and read the text. Regularly exploring different eye positions through the magnifier can help determine the best location for reading. Eccentric viewing techniques can also be employed with telescopes or binoculars, underscoring the importance of maintaining an off-center gaze for extended periods.

The skill of eccentric viewing can be invaluable for seeing steps or curbs. For instance, by looking upward, many individuals can find a clear spot to identify the edge of the steps. Instead of moving their head and

Searching around—an approach that can be time-consuming—mastering eccentric viewing enables a person to quickly and efficiently identify objects without extensive searching.

While eccentric viewing may not be widely taught, particularly outside of low vision rehabilitation centers, individuals can learn and practice these techniques independently. Persistence is key, as mastering this skill can be challenging and frustrating at first. However, with time and dedication, eccentric viewing can become second nature, enabling individuals to apply this skill effectively in various daily tasks.

I See an Eye Specialist. What's the Purpose of Going to a Low Vision Clinic?

Low vision services, also known as low vision rehabilitation, provide essential support for daily living tasks, as mentioned earlier. Many individuals and their families often wonder why consulting a low vision doctor is necessary, which can lead to some confusion. A low vision clinic offers techniques and devices to help improve functional vision.

Your ophthalmologist or retina specialist primarily addresses your medical eye health and evaluates whether you may need treatment or ongoing follow-up for medical reasons. However, visiting a low vision center can be beneficial if you struggle with everyday activities such as reading, writing, recognizing faces, or driving. The low vision center may request a recent report from your ophthalmologist. Still, it's important to note that low vision doctors do not provide ongoing medical treatment.

"Low Vision" refers to impairment that cannot be corrected with surgery, medication, or standard glasses. A common definition of low vision is the inability to perform simple daily tasks with ease. This means that the vision in both eyes is affected, making tasks like reading mail, writing checks, or seeing the thermostat on the wall difficult. Many individuals may struggle to recognize faces or experience difficulties with bright lights or transitions between bright and dark environments.

Macular degeneration is one of the most prevalent causes of low vision; however, individuals with the same condition can experience different levels of functionality and may require personalized attention and services.

Typically, low vision care starts with optometrists who have received specialized training in low vision rehabilitation.

They may have completed a specialized residency or additional training in this area. Some low vision specialists work in private practice, while others are employed by non-profit organizations or the US Department of Veterans Affairs (VA). Many VA hospitals or large non-profit agencies have dedicated low vision clinics within their facilities.

The primary objective of a low vision evaluation is to enhance an individual's functional vision by addressing the specific tasks that have become challenging for them. When attending a low vision appointment, it is essential to be precise and prepared with a list of visual goals that are important to you in your daily life.

For example, several weeks before the appointment, you should compile a list of activities you can no longer perform or that you find frustrating. Before your appointment, prioritize this list to highlight the top ten most essential items. Research indicates that with the correct low vision aids, the patient can achieve as many as 8 out of 10 goals. Often, patients can reach these objectives within just one or two appointments, and many may choose to return annually to continue improving their quality of life.

Low Vision Refraction

A typical low vision evaluation starts with checking your current prescription glasses to ensure they are optimized. You may have been informed that your prescription cannot be enhanced; however, this might only be partially correct. A low vision optometrist can conduct a specialized low vision refraction, which differs from a routine eye exam and may yield improvements.

In addition to the low vision refraction, it is sometimes possible to prescribe stronger bifocals tailored for low vision needs, which may not be available through a conventional eye examination. These specialized bifocals can incorporate greater magnifying power and training on their effective use in daily life.

Prismatic Half-Eye Reading Glasses

Various powerful reading glasses are also available for those with low vision. While regular reading glasses typically have a maximum strength of +3.00 diopters, low vision glasses, known as prismatic half-eyes, start at +4.00 and can go up to +6.00 or +8.00. As the strength of the glasses increases, users must learn to adapt by holding items closer to their faces. Many low vision centers offer the option to loan these glasses during the adjustment period, allowing individuals to adapt to them before purchasing.

Illuminated LED Handheld Magnifiers

Magnifying glasses play a crucial role in low vision assessments, and various techniques are available to help individuals discover what works best for their specific vision needs. Many of these devices are equipped with built-in illumination, such as LED lights, providing both magnification and illumination, ideal for reading in various environments, particularly in low-light situations like reading a menu in a restaurant.

Patients may also require instruction on properly using magnifying glasses, which may necessitate an adjustment period. Techniques taught during the examination include positioning the magnifier, using it effectively with the better-seeing eye, and holding the lens closer to the eye to achieve a larger field of view.

Illuminated LED Stand Magnifiers

Illuminated stand magnifiers are specialized optical devices designed to assist individuals with low vision in reading and performing intricate tasks. These magnifiers feature a lens mounted on a stand, allowing users to position the magnifier at an optimal distance above the reading material while it rests directly on the material.

The built-in illumination, often LED lights, provides direct illumination of the text or object being viewed, improving visibility in low-light conditions and enhancing contrast. Stand magnifiers are handy for reading books, newspapers, or magazines, especially useful when reading for extended periods, as the lens does not have to be held upright to view. Stand magnifiers are also ideal for those who are frail or may have tremors.

Telescopes, Binoculars, and Telescope Glasses

Other visual aids, such as telescopes or telescopic glasses, are beneficial for distance viewing, such as watching television or attending concerts and plays. Some specialized telescope glasses are designed for watching TV, while others offer greater magnification for observing distant activities, such as children playing sports or landscape features during vacations. Additionally, small binoculars can be helpful for these applications.

Bioptic telescope glasses are a type of eyewear that may allow individuals to drive in certain states, provided they meet specific vision requirements. Regulations vary by state, and some states do not permit driving with bioptic glasses. You can conduct a web search for "bioptic driving" for more information. Special driving requirements and driver training may be required in many states that allow this. Many of these details can be discussed during a low vision evaluation.

Sun Filters and sunglasses

A critical element of a low vision assessment involves identifying suitable tints or shades for sunglasses or sun filters. These filters are available in various colors and tints, ranging from lighter to darker shades. Many individuals with low vision report that dark sunglasses can worsen their vision, making it essential to find the right type of sunglasses tailored to their eye condition.

Wraparound-style sunglasses, which can be worn over regular prescription glasses, are gaining popularity. These sunglasses block ultraviolet light and are generally more affordable. Additionally, having multiple pairs of fit-over sunglasses can be advantageous— for example, having one darker pair for sunny days and a lighter pair for overcast days. Some sun filters also possess unique features that enhance clarity or increase contrast while walking. During the vision evaluation, staff members may take sunglasses outdoors to evaluate which lenses work best.

Teamwork and a Multi-disciplinary Approach to Low Vision

Occupational Therapy

Occupational and low-vision therapists can also provide guidance on maximizing functionality with low-vision devices. Some professionals may recommend follow-up visits to ensure patients succeed with their prescribed magnification lenses. Some occupational therapy services may also conduct home visits to assess home safety and provide recommendations for daily living.

Orientation and Mobility Services - O&M

Orientation and mobility (O&M) training is a vital service designed for individuals who are blind or have low vision, focusing on enhancing their ability to navigate their environment safely and independently.

Occupational and mobility (O&M) specialists are trained professionals who assess a person's spatial orientation, sensory skills, and mobility needs, providing personalized instruction to help them learn to move or travel confidently in various settings. This training may include techniques for using a white cane, understanding public transportation systems, recognizing landmarks, crossing streets safely, and developing effective route-planning skills. Additionally, O&M specialists teach individuals how to effectively use their remaining vision and other senses to build a mental map of their surroundings. Ultimately, the goal of orientation and mobility services is to empower individuals with the confidence and skills to engage in their communities and lead independent lives fully.

Technology Specialists

Many low vision centers now employ technology specialists as the variety and number of assistive devices and applications continue to grow. These innovations enable individuals to maximize the benefits of smartphones, tablets, computers, virtual reality goggles, smart glasses, and other advanced technologies. Patients are often encouraged to bring their smartphones and tablets to learn about accessibility features that can simplify or greatly enhance their use. Below, we explore the different types of innovative technologies available.

Finding a reputable low vision center in your area is essential to accessing tailored support and resources. It is advisable to consult your eye doctor for recommendations regarding local low-vision centers. You can also conduct an online search for low vision services, such as "Low Vision Resources" in your state, to find comprehensive listings of low vision centers, libraries,

social service agencies, and government programs that cater to individuals with vision impairments. Connecting with these resources can provide specialized assistance in managing macular degeneration and enhancing overall visual capabilities.

Counseling and Support Groups

Many agencies that serve individuals who are blind or visually impaired offer vital counseling services conducted by social workers, licensed counselors, or psychologists. These professionals play a crucial role in helping clients adjust psychologically to vision loss, equipping them with essential coping skills that can significantly enhance their quality of life. The grief associated with losing one's vision is a common and deeply felt experience, and these specialized services are instrumental in addressing those emotional challenges.

Moreover, these agencies frequently offer group support, where a qualified professional facilitates gatherings for individuals facing similar adjustments. These support groups create a safe and nurturing environment where participants can learn about valuable resources and coping strategies while connecting with others who understand their struggles. This shared experience is not only beneficial for those experiencing vision loss but also for their family members and spouses, who often grapple with their loved ones' challenges as well.

Additionally, many of these professionals may have a background in gerontology and aging, allowing them to assist older adults in understanding not only their vision impairment but also other factors that may be impacting their overall quality of life. This comprehensive support is crucial for fostering resilience and enhancing the well-being of both individuals experiencing vision loss and their families.

What Innovative Technology is Transforming the Lives of Individuals with Macular Degeneration?

Since the mid-1970s, the CCTV video magnifier has emerged as a widely adopted technology aiding individuals with advanced macular degeneration. These reading technology devices comprise a camera system that captures images of reading materials placed below it on a tray,

which are then displayed on a monitor akin to a computer screen. While not functioning as a computer, the CCTV magnifier is a specialized tool for reading, writing, and inspecting various items, such as photographs, pill bottles, or jewelry, when positioned under the camera lens. These devices have historically been highly effective for individuals with significant macular degeneration.

Until the early 2000s, video magnifier systems were cumbersome and bulky, and lacked portability. The introduction of flat-screen monitors in smaller sizes revolutionized the video magnifier market, making these devices significantly more portable and affordable.

A camera system equipped with a 5-inch screen can now be easily carried to dimly lit spaces, such as restaurants, or moved between rooms for tasks like reading mail, checking food labels in the pantry, or adjusting the thermostat on a wall. This innovation meant that individuals no longer had to relocate their reading materials to the machine; instead, they could conveniently bring the camera device along wherever needed.

Using a camera instead of a magnifying glass presents several advantages, notably the capability to adjust magnification levels effortlessly with the press of a button. Users can quickly increase the magnification power by pressing the plus button, surpassing the limits of traditional magnifying glasses. Additionally, the camera system allows adjustments to the contrast and background colors of the reading material, facilitating easier viewing and providing contrast for various eye conditions.

Newer camera systems now have optical character recognition (OCR) functionality. This feature enables users to place a document under the camera, press a button, and have the technology capture a picture of the page and read the content aloud. The user can adjust the reading speed to be faster or slower; different voices are often available. Additionally, standalone devices use OCR to audibly read printed material without displaying the text visually.

A new product category features Virtual Reality (VR) goggles designed to be worn over glasses, allowing users to engage in activities such as watching television, exploring museums, attending concerts, and visiting various locations while traveling. The landscape of wearable technologies is continually evolving, with numerous brands introducing innovative

solutions that enhance the user experience. This technology is becoming increasingly sophisticated, adding specialized features to accommodate different eye conditions, offering options for taking photos and videos, and storing them directly within the goggles.

Accessibility technology enables individuals with macular degeneration to utilize Apple devices such as the iPhone, iPad, and Apple computers. Apple stands out as a preferred brand among visually impaired individuals due to its wide range of accessibility features and user-friendly interface.

Even individuals with limited vision can easily navigate and utilize features like Siri, the voice assistant, to manage calendars, set reminders, make calls, send and receive text messages, and more, entirely through voice commands. Through practice, users can also send and receive emails, dictate notes, and have them transcribed using voice input. Asking Siri how to say something in a different language is also available. Apple also has a dedicated customer service for those with vision impairment, by calling 877-204-3930.

A variety of specialized applications, known as Apps, cater specifically to the needs of visually impaired users, including Apps that utilize the smartphone camera for magnification purposes. The App Store offers many options when you search for keywords like "magnifier" or "vision impaired."

Noteworthy apps include Seeing AI, a popular free App offering OCR technology for both Apple and Android phones and tablets. Other helpful Apps, such as Be My Eyes and Be My AI, assist users in describing their surroundings and provide visual guidance through live volunteers accessible via video calls. Furthermore, Blind Square is a pedestrian GPS App that helps users navigate unfamiliar areas by describing nearby surroundings, street names, and points of interest as they walk. Visit the Apple App Store or Google Play Store for Android systems.

Artificial Intelligence (AI) boasts numerous innovative features and is being increasingly integrated into cutting-edge wearable devices. These types of systems resemble regular glasses with built-in camera systems that can read aloud. The special glasses also feature innovative capabilities, such as reading only a specific section of the text requested, like "Read me the salads" when viewing a menu page. They can also translate text from other languages. One popular brand is the Ray-Ban Meta Smart glasses.

Smart speakers, such as Amazon's Alexa and Google Home, are highly rated among seniors and individuals with visual impairments. These devices enable users to engage with voice commands, such as inquiring about the time, date, and weather, playing games, listening to music or jokes, and accessing a wealth of information throughout the day.

Innovations include sunglasses with built-in speakers for interacting with Alexa while on walks, as well as an Alexa model designed for the kitchen featuring a 10-inch screen for interactive features, such as requesting information about specific items. These types of products require Wi-Fi accessibility in the home. See Amazon.com and search for Alexa.

To stay informed about emerging technologies, you can explore resources such as YouTube videos and search for information on low vision technology. This will take you to many of the latest product videos and reviews to help you stay up to date. Another good resource is AFB AccessWorld, produced by the American Foundation for the Blind. AccessWorld can be sent to you each month via email, or you can also download an app to help you stay up to date with technology and unbiased reviews.

For those interested in attending conventions on technology for the visually impaired, notable events include the Assistive Technology Industry Association (ATIA.org), held annually in Florida every January, and the California State University, Northridge Conference (CSUN.edu/COD), conducted in Anaheim, California, every March.

These conventions feature exhibition halls where consumers can explore offerings from companies worldwide. Attendees, including consumers and their families, typically have access to the exhibition hall to learn about the latest products each year at little or no cost. As many say, "This show changed my life."

What Organizations Should I Be Aware of Now that I Have Macular Degeneration?

For those interested in advancing their knowledge about macular degeneration, the government offers a clinical trials website that can be

accessed by searching for "Macular Degeneration" to explore ongoing research sponsored by the government. Go to clinicaltrials.gov.

The Foundation Fighting Blindness, a private non-profit organization available at fightingblindness.org, supports research on various inherited retinal diseases, hosts webinars, and arranges local and state chapter meetings. Every other year, they organize a national conference called VISIONS, held in different locations across the US.

Hadley is an invaluable resource for individuals living with macular degeneration, offering free correspondence courses on a range of topics, from daily living assistance to understanding the condition. Their instructional materials are suitable for all ages and can be used by individuals or groups.

They also sponsor a podcast featuring the latest information for individuals with vision loss, from helping with daily life activities to learning about the newest technology available. Visit Hadley Helps at Hadleyhelps.org to find your podcasts. Interested individuals can visit Hadley.edu or contact the organization toll-free at 800-323-4238 for more information and ask about their popular podcasts.

The Council of Citizens with Low Vision International (CCLVI) is a consumer advocacy group dedicated to supporting individuals with low vision. It facilitates meetings online or via phone on various topics of interest. CCLVI has state and regional groups, as well as a national conference, which is part of the American Council of the Blind Convention, held in various US cities. For inquiries, contact CCLVI at 844-460-0625.

The Canadian National Institute for the Blind (CNIB.CA)
Founded in 1918, the CNIB is a non-profit organization driven to change what it means to be blind today. They deliver innovative programs and powerful advocacy that empower people impacted by blindness to live their dreams and tear down barriers to inclusion. Their work as a blind foundation is powered by a network of volunteers, donors, and partners across the country.

Low Vision Support or self-help groups connect individuals with similar conditions and can be extremely helpful in adjusting to vision loss. Support groups are formally or informally organized in most states, and locating

them may require some effort. Resources such as organizations that serve the blind or visually impaired, or a web search for "low vision resources in [your state]" can help identify local support groups. Attendees often find these groups life-changing as they offer shared experiences and practical strategies for coping with low vision.

VisionAware is a free, easy-to-use informational service for adults with low vision and their families, caregivers, healthcare providers, and social service professionals. Visitors will find tips and resources on living with low vision; information on eye diseases and disorders; and a searchable, free directory of services. You can also connect with VisionAware on Facebook or go to visionaware.org.

To find an ophthalmologist or retina specialist, contact the American Academy of Ophthalmology at 415-561-8500 in San Francisco or explore ophthalmology associations in your state.

The American Optometric Association can guide those seeking a low vision optometrist or a low vision rehabilitation clinic for specialized glasses, magnifying lenses, technology, and training in their use, primarily for individuals with low vision. Aoa.org, and you may also search for your state optometric association to inquire about low vision services in your state.

About the Author:

Tom Perski, M.A.

Tom has been a pioneer in the field of low vision for over four decades. In the 1990s, he played a key role in establishing the first major low vision conferences in Chicago, while also directing innovative rehabilitation programs for children and adults at the Deicke Center for Visual Rehabilitation in Wheaton, Illinois.

Tom was the founder and clinical director of Southwest Low Vision from 1994 until 2008, serving individuals with low vision in Arizona and New Mexico. His innovative approach had a profoundly positive impact on the lives of those in Tucson, Arizona, and nine other rural cities across both states. During this time, the AER professional organization honored him

with the Margaret Blum Award, recognizing him as the top professional in Arizona's vision rehabilitation field.

As senior vice president at the Chicago Lighthouse from 2008 to 2017, Tom built a talented team of assistive technology and rehabilitation experts, collaborating with companies to develop cutting-edge technologies that gained international recognition.

Tom served as vice president for a Silicon Valley technology company that was the first to develop virtual reality (VR) technology for individuals with vision impairment. His innovative contributions to this technology enabled him to travel extensively to many countries worldwide. After returning home to settle in Prescott, Arizona, he became the founder and director of the low vision services for the non-profit organization known as People Who Care.

His journey with Stargardt Macular Dystrophy began in college, necessitating a shift from his aspirations as a commercial artist and forcing him to drop out of college. Undeterred, he re-enrolled in college as a legally blind student in his late 20s and earned a bachelor's degree in psychology and gerontology, followed by a master's degree in Family and Community Counseling from Northeastern Illinois University.

Tom has lectured at over 85 professional conferences, sharing his expertise and advancing the field of low vision rehabilitation. He has served on the boards of several agencies dedicated to supporting individuals who are blind or visually impaired and has been instrumental in launching many innovative new programs.

