



## Recommendations on Assistive Technology for Patients with Low Vision

### Summary

Provision of, or referral to, vision rehabilitation services is now the standard of care for all patients who experience vision loss. Innovative assistive technologies for the visually impaired have proliferated in recent years, resulting in more available options for patients. Modern vision rehabilitation services can now help most people with any degree of vision loss.

### Introduction

Most ophthalmologists are familiar with long-established optical low vision aids, such as handheld and stand magnifiers and telescopes, as well as with non-optical aids that assist patients in performing daily activities. However, recent advancements may not be as familiar. For example,

- Tabletop and handheld video magnifiers have become more sophisticated. In addition to magnifying print for reading, models are available that can allow for information from across the room to be gathered and presented clearly or that can even read text aloud.
- Computers and smartphones have expanded accessibility features. Numerous new applications are available to assist the visually impaired, and additional features and apps are developed and/or upgraded regularly.
- Wearable assistive technology options that utilize virtual reality and augmented reality are also increasingly available and undergoing rapid improvement, offering additional options for low vision patients.

Given that new products are released regularly into a highly competitive market, some of these products will likely survive and be supported as long-term options, whereas others will disappear from the market. Patients may be left with unsupported devices for which they may have made significant financial investment.

Ophthalmologists face multiple challenges when planning specific recommendations for what options might work best for their patients. For example,

- Patients have differing levels of impairment, personal needs, and preferences.
- Scientific validation of such products through research is lacking.
- Costs for low vision assistive technology are highly variable.
- The pace of advancement is rapid.

Many patients ultimately use an array of tools to assist them in their daily activities. To achieve the best possible use of their remaining vision, patients can benefit significantly from working with professionals who are familiar with their visual impairment and can provide them with the opportunity to explore and train with the wide variety of adaptive equipment available.

### Background

Ophthalmologists protect sight and empower lives every day by managing and treating eye disease in their patients. However, some situations require that they go beyond disease management to further address difficulties experienced by their patients with vision loss.

Ophthalmologists seeing patients with less than 20/40 best-corrected visual acuity, contrast sensitivity loss, central scotomas, or peripheral field loss can *recognize* and *respond*:

- *Recognize* that vision loss impacts their patients' lives.
- *Respond* by advising patients that although vision rehabilitation cannot improve patients' vision, it is an important option to assist patients to optimize the vision that they do have and to find solutions to allow patients to address their goals.

Patients can be counseled that performing valued tasks such as reading and using a computer or cell phone can be improved through vision rehabilitation. Referring patients to these services can make a difference in their quality of life when surgery or medical treatments cannot.

As stated by Academy CEO David W. Parke, MD, "One of the things that we can do as ophthalmologists is to realize the importance of referral for vision rehabilitation for any patient who is starting to lose their vision. And it's most effective when we do this early in their vision loss, at a time when they can really begin to involve themselves in the vision rehabilitation process. Vision rehabilitation is now the standard of care for patients who are losing their vision. This is something that all of us as ophthalmologists should keep in mind every day in our offices."

## **Recommendations**

Ophthalmologists can prepare for patient inquiries about (and referring patients to) low vision resources by familiarizing themselves with Academy vision rehabilitation models and initiatives as well as with local and regional vision rehabilitation services.

Recommendations include pursuing the following strategies:

- Review Academy resources and initiatives via the following links: [Academy Initiative in Vision Rehabilitation](#); [Vision Rehabilitation Preferred Practice Pattern Guideline PPP](#).
- Take advantage of low-vision content provided at the AAO Annual Meeting, on the ONE Network, and in *EyeNet* Magazine.
- Stay abreast of ongoing releases of new assistive technologies and arrange to try new products and advances personally. Many vendors display relevant technologies at the AAO annual meeting and will also demonstrate devices in clinicians' offices.
- Provide, or refer eligible patients for, low vision evaluation and services, where patients are given the opportunity to express functional challenges, have their remaining vision assessed quantitatively and qualitatively, and receive appropriate counsel and guidance on environmental adaptations, training, and specific devices and technologies appropriate for their particular situations.
- When low vision providers are not available in the area, direct patients to other resources in the community. Consult the [EyeSmart](#)<sup>®</sup> resource list and/or [VisionAware](#), a website that lists services available in the United States and Canada.
- Ophthalmologists considering a reduced practice load, such as when transitioning to retirement, might consider incorporating more vision rehabilitation services into their practices, thereby allowing them to remain connected with their patients while reducing their workloads. *Note:* Medicare reimburses for a low vision evaluation by an ophthalmologist, optometrist, or occupational therapist.
- Residency programs should emphasize the need for ophthalmologists in practice to recognize the patients who may benefit from vision rehabilitation and to refer those patients for appropriate services.

- Given the shortage of providers who specialize in vision rehabilitation, ophthalmology residency programs should consider focusing on vision rehabilitation education in greater depth.

### Suggested Reading and Related Links

1. American Academy of Ophthalmology. Initiative in Vision Rehabilitation. <https://www.aao.org/low-vision-and-vision-rehab>. Accessed September 28, 2020.
2. American Academy of Ophthalmology. *More older Americans will suffer from low vision, Here's how to make life easier and safer*. News release. September 24, 2019. <https://www.aao.org/newsroom/news-releases/detail/more-older-americans-will-suffer-from-low-vision>. Accessed September 30, 2020.
3. American Academy of Ophthalmology Vision Rehabilitation Committee. Practice Pattern® Guidelines. *Vision Rehabilitation Preferred Practice Pattern® 2017*. American Academy of Ophthalmology; 2017. [www.aao.org/ppp](http://www.aao.org/ppp)
4. Brown JC, Goldstein JE, Chan TL, Massof R, Ramulu P; Low Vision Research Network Study Group. Characterizing functional complaints in patients seeking outpatient low-vision services in the United States. *Ophthalmology*. 2014;121(8):1655-1662.e1.
5. Chan T, Friedman DS, Bradley C, Massof R. Estimates of incidence and prevalence of visual impairment, low vision, and blindness in the United States. *JAMA Ophthalmol*. 2018;136(1):12-19.
6. Coker MA, Huisinigh CE, McGwin G Jr, et al. Rehabilitation referral for patients with irreversible vision impairment seen in a public safety-net eye clinic. *JAMA Ophthalmol*. 2018;136(4):400-408.
7. Goldstein JE, Jackson ML, Fox SM, Deremeik JT, Massof RW; Low Vision Research Network Study Group. Clinically meaningful rehabilitation outcomes of low vision patients served by outpatient clinical centers. *JAMA Ophthalmol*. 2015;133(7):762-769.
8. Lamoureux EL, Pallant JF, Pesudovs K, Rees G, Hassell JB, Keeffe JE. The effectiveness of low-vision rehabilitation on participation in daily living and quality of life. *Invest Ophthalmol Vis Sci*. 2007;48(4):1476-1482.
9. Rush D. Helping patients maximize low-vision technology on smart devices. Retina specialists are part of the solution. *Retinal Physician*. 2020;17(July/August):29-31.
10. Varma R, Vajaranant TS, Burkemper B, et al. Visual impairment and blindness in adults in the United States: demographic and geographic variations from 2015 to 2050. *JAMA Ophthalmol*. 2016;134(7):802-809.

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