

Vision Rehabilitation

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Cover art created by a student at Perkins School for the Blind



Dear Colleagues,

As clinicians, we are often faced with patients whose vision we cannot improve any further by medical or surgical treatment. These patients have low vision, a condition that is predicted to affect more than 5 million people in the United States by the year 2030. Chronic vision impairment is a leading cause of a compromised quality of life with high rates of depression reported in patients of all ages, races, and genders. Vision rehabilitation can help your patients maximize the use of their remaining vision and improve the overall quality of their lives.

Just as stroke rehabilitation or cardiac rehabilitation is part of the continuum of general medical care, vision rehabilitation is part of the continuum of ophthalmic care. You play an important role in this continuum, which is to connect patients with vision rehabilitation services and self-help resources while they are under your care.

In the 1960s, Mass. Eye and Ear became home to the nation's first comprehensive, hospital-based Vision Rehabilitation Service. The Service was developed under the leadership of Dr. Joel Kraut, Dagmar Friedman, Robert Storer, and a dedicated group of trustees. Since then, vision rehabilitation has emerged as a distinct ophthalmic subspecialty in the United States and Canada.

We follow the Comprehensive Vision Rehabilitation model of care, which was adopted by the American Academy of Ophthalmology. This multidisciplinary model addresses the whole person, including safety, activities of daily living, reading, continuing to participate in the community, and psycho-social well-being. The Massachusetts Commission also uses this model to ensure that all patients who are legally blind (20/200 or worse) are offered support services.

It is critical to identify at-risk patients and refer them for vision rehabilitation in order to preserve their independence and quality of life. We hope you and your patients benefit from the digital resources included in this issue of *Eye Insights*. Smartphone users can also download a free magnifying and image stabilizing app, developed at Mass. Eye and Ear, called SuperVision+ Magnifier (iOS or Android operating systems).

Joan W. Miller, MD

David Glendenning Cogan Professor and Chair
Harvard Department of Ophthalmology
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LOW VISION OVERVIEW

There are six levels of visual function

(1) Normal vision, (2) moderate vision impairment, (3) severe vision impairment, (4) profound vision impairment, (5) near-total vision impairment, and (6) blindness

What is low vision

Loss of eyesight caused by disease or injury to the eye or brain that cannot be corrected with glasses, contact lenses, surgery, or medical treatment

Most common patterns of vision loss

- Loss of central vision (AMD, diabetic retinopathy)
- Loss of peripheral vision (glaucoma, stroke, retinitis pigmentosa)
- Night blindness (various acquired and hereditary eye conditions)
- Blurred or hazy vision (e.g., corneal disorders)

Vision rehabilitation

The process of assessing patients with vision impairment and helping them to make the best use of their remaining vision to regain or retain their independence and quality of lives



WHO CAN BENEFIT FROM VISION REHABILITATION SERVICES?

Patients who are, or may become, limited by their vision loss can benefit from vision rehabilitation.

Individuals with acquired or genetic diagnoses that render them mildly, moderately, or severely visually impaired. Even those who are totally blind can benefit from vision rehabilitation.

■ Rachel Huckfeldt, MD, PhD

Inherited Retinal Disorders Service, Mass. Eye and Ear

I refer patients who are struggling with their vision independent of the actual degree of impairment. Even for individuals with mild visual impairment, the Vision Rehab team often has suggestions that are easy to implement but have a significant impact. For patients with progressive diseases, these assessments can make them aware of what assistive strategies and technologies might benefit them in the future.



Clinical Summary

THE PROBLEM

You are doing all you can do, surgically and medically, for your patients with vision impairment, but they continue to report difficulty with visual tasks or have to abandon activities they enjoy.

THE SOLUTION

Vision rehabilitation is the next step in the continuum of ophthalmic care. Rehabilitation helps patients retain or regain independence and quality of life.

THE WAY FORWARD

1. Identify individuals who are, or may become, limited by their vision loss.



Download and print the **Visual Function Survey** and use with intake paperwork.

2. Educate patients with vision impairment about low vision and vision rehabilitation.



Download and print **Low Vision Resources** and **10 Helpful Tips** and share with patients.

masseyandear.org/visionrehab

3. Refer patients for vision rehabilitation. Check out these resources to find a service near you:

Lighthouse Guild
T: 800-284-4422
lighthouseguild.org

American Foundation for the Blind
T: 800-232-5463
afb.org

U.S. Department of Veterans Affairs
T: 844-698-2311
va.gov

Ask these 6 questions to evaluate the quality of a vision rehabilitation service

1. Does the prescribing provider train the patient on use of devices?
2. When prescribing devices, are some devices loaned before purchase, or returnable?
3. In what areas do you offer rehabilitation training, such as reading, writing, shopping, cooking, lighting and glare control?
4. Do you offer home assessments and mobility services?
5. What resources and support groups are available?
6. Are services free, or are they billed to Medicare or other insurance? If not, what is the charge? Note: Medicare covers most services, but not devices.

Referral guidelines

- Any medical professional can refer a patient with vision impairment to a vision rehabilitation service
- Clinical referrals should include information from a recent comprehensive eye exam (within the past 12 months)
- When possible, referring physicians should also send other visual field testing results. For more information, consult the "AAO Guidelines on When to Refer"

aao.org/low-vision-and-vision-rehab



As vision loss affects many areas of one's life, rehabilitative strategies focus on the whole person, including reading, activities of daily living, safety, continued participation in community, and well-being.

What help is available for my patients?

■ Amy Watts, OD

Director, Vision Rehabilitation Service, Mass. Eye and Ear



Patients with any level of vision impairment can benefit from a low vision assessment. During the initial consultation, a doctor of optometry who specializes in low vision rehabilitation will assess the patient's visual function as well as her unique characteristics and goals. Tests of visual function may include visual acuity (near and far), continuous text, critical print size and reading speed, contrast sensitivity, macular perimetry, and peripheral visual field. Rehabilitative strategies are determined based on the patient's capabilities and goals.

Magnification is a cornerstone of **reading rehabilitation**. Patients learn how to use traditional devices—such as prism half-eye glasses, electronic hand-held and desktop magnifiers (CCTVs)—as well as newer technologies—such as head-mounted video displays. Patients will receive instruction at an outpatient office, as well as at their home and work setting.

Evaluating the patient in the home and work setting is very important in addressing limitations in **activities of daily living**. Patients learn how to reduce glare and increase contrast with proper lighting, as well as how to use tactile markings for setting oven temperatures for cooking, kitchen organization, and appliance use. Patients also learn tips and techniques for self-care and for participating in recreational activities.

Following a home **safety** evaluation, patients learn fall prevention strategies and can develop a plan to mark their medication bottles or use a medication organizer.

Vision rehabilitation also addresses **mobility and independence**, so that patients may continue to remain active in their communities. Transportation alternatives are addressed when patients cannot drive so that they can continue activities they value—such as voting and attending religious service.

Losing vision is a difficult psychological process that requires new coping strategies. Vision loss impacts not just the patient, but also their family members. Jobs and career plans are affected. Vision rehabilitation should offer options to address the need for **emotional support** with resources, education, support groups, counselors, and social workers.

How can we measure quality and outcomes for vision rehabilitation?



■ Kevin Houston, OD, MSc

Vision Rehabilitation Service, Mass. Eye and Ear; Director, Vision Rehabilitation Service, Spaulding Rehabilitation Hospital

Physicians today want to use the best available data to diagnose, treat, and rehabilitate patients. Since 2010, Mass. Eye and Ear has led the medical community nationwide in developing and reporting ophthalmology outcome measures in its annual *Quality and Outcomes Report* (masseyeandear.org/quality).

At Mass. Eye and Ear, we use two patient-reported outcome measures of vision-related quality of life: the National Eye Institute Visual Functioning Questionnaire (VFQ-25) and the Impact of Vision Impairment (IVI) Questionnaire. Patients who have used our rehabilitative services have reported overall improvements in vision-related quality of life, with greatest improvements in mental health, mobility, and well-being.

For our next Outcomes report, we will use another measure: the Psychological Impact of Assistive Devices Scale. This scale should allow us to determine which devices have the greatest impact on improving vision as well as to investigate potential predictors of success, such as age, diagnosis, or additional in-home training with an occupational therapist. As more measures are developed and validated, such as the virtual reality functional assessments under development at Mass. Eye and Ear, we will apply them to clinical practice and evaluate their efficacy in future Outcomes reports to ensure the best care possible.

What does the future of vision rehabilitation look like?

■ Joseph Rizzo III, MD

Director, Neuro-Ophthalmology Service, Mass. Eye and Ear; Co-director, Harvard Ophthalmology Mobility Enhancement and Vision Rehabilitation Center of Excellence



"Emerging biological and engineering technologies are allowing us to help patients as never before. Patients who receive vision rehabilitation services at Mass. Eye and Ear are given information about clinical trials and future possibilities that might offer hope for visual improvement."



The Harvard Ophthalmology Mobility Enhancement and Vision Rehabilitation Center of Excellence aims to help people with low vision safely achieve greater freedom and quality of life by enhancing the use of their residual vision and by improving their ability to navigate on foot or by car. Researchers and clinicians use real-world and virtual environments to investigate, clinically assess, and design rehabilitation devices and training programs for patients with many different types of visual impairments.

The following are a few of the Center's research initiatives:

- Smartphone apps for low vision and wearable electronic visual aids
- Novel assessment and training strategies for brain-based visual impairments
- Virtual reality simulations of daily tasks, such as driving and walking, to objectively assess impairments and response to visual devices and training
- Prism glasses for visual field expansion in hemianopia and other forms of peripheral vision loss
- 256-channel retinal prosthesis

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