



THE OHIO STATE
UNIVERSITY

COLLEGE OF MEDICINE

Visual Rehab Therapy for the person with MS

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Presenter Bio

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Molly Bird is an Occupational Therapist at Martha Morehouse who treats clients on the neuro rehab teams for multiple sclerosis, concussion, and stroke. She completed her clinical doctorate degree from OSU in 2019. She has a special interest in vision therapy and coordinates with neuro optometrists and ophthalmologists to provide multidisciplinary care for her patients with neurological vision changes.

Occupational Therapy as part of the Vision Team ⁸

Why would I see an Occupational Therapist?

- Occupational Therapy is focused on any change that will impact your ability to do your everyday activities. Vision is required to do most things such as reading instructions, using a computer, and safely driving a car.
- Visual symptoms from MS can threaten independent functioning, increase fatigue, and interfere with activities at work and at home.
- For people with MS, Occupational Therapists can complete an in-depth clinical assessment to determine vision changes and how they impact daily life performance. Based on those results, OTs will determine the best course of action. This may include a referral to a vision specialist for further screening.

Different types of vision specialists

Optometrist	<ul style="list-style-type: none">• Primary eye care provider• Regular check ups• Look at acuity and screen for health of eye
Ophthalmologist	<ul style="list-style-type: none">• Medical doctor of eye that can perform eye surgery• Can specialize in certain procedures or conditions• In-depth health of eye and cranial nerves involved in eye movement
Neuro-Optometrist	<ul style="list-style-type: none">• Specialized training in working with people after a neurologist change• Assess the muscles that control your eye and how they work together

Activities Impacted by Vision

Examples of tasks that could be addressed in vision therapy

- Navigating through the home
- Reading
- Computer use & Typing
- Phone use
- Driving
- Watching TV
- Writing & paperwork
- Filling out a check
- Dressing
- Cooking
- Grocery shopping
- Feeding
- Crafting
- Outdoor recreation



Contrast and Color Sensitivity ^{2,3,5,7}

Intervention ideas

- Use lighting that approximates natural daylight (at least 24 watts)
- Point a cell phone flashlight, an LED flashlight, or a portable lamp directly at the task you're working on to reduce eye strain
- Increase task lighting over the stove, dressing area, and desk
- Outline doorways, steps, and wall switches with bright tape or markers
- Invert contrast and colors on your phone, tablet, and computer
- Use a keyboard with black lettering on a yellow background
- Use a dark placement under a white plate
- Eliminate busy background patterns in the home and on phone screen
- Color identification apps



Glare ^{4,5,6}

Intervention ideas

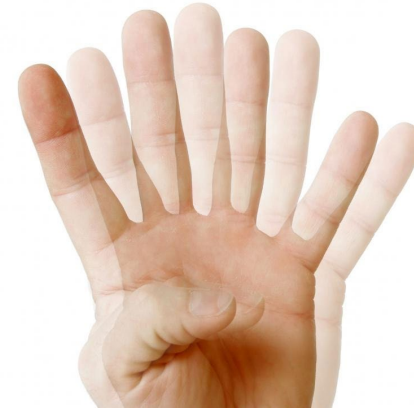
- Wearing eyeglasses specific for glare control
 - Blue light blocker lenses for screen use
 - Lighter yellow tinted lenses for inside use/lower lighting
 - Hazelnut/amber-tinted lenses for outside/brighter lighting
- Position yourself and your computer/tv screens away from windows or bright lighting
- Avoid sitting with a window directly in front or behind you
- Move mirrors and shiny objects
- Addressing glare may improve eye strain, fatigue, reading speed, and visual search



Double vision (Diplopia)^{4,5,6,7}

Intervention ideas

- Compensatory strategies:
 - Covering one eye
 - Patching over one eye
 - Wearing eyeglasses with prisms (prescription lenses)
- Vergence exercises may be prescribed by neuro optometry to improve eye alignment and coordination
- Hold onto handrails and use sensory feedback from the feet to help with depth perception and judgement of heights on the stairs



Magnification ^{5,6}

Tools for magnification

- Handheld illuminated magnifier
- Handheld monocular telescope
- Mounted telescopic lenses (Bioptic lenses)
- Changing display settings for larger text on phone, computer, tablet, TV, and e-books
- Desktop magnifiers/CCTV's
- Positioning closer to task objects
- Also consider text-to-speech on phone and computer, and books on tape

Large print options

- Newspapers
- Books
- Telephone dials
- Playing cards
- Calendars
- Planners
- Calculators
- TV remote
- Medication labels



Improving organization for vision ⁶

Organization in the home, at work, and in the community can make tasks less frustrating for those with vision changes.

Examples:

- In the refrigerator, organize the most frequently used foods toward the front of the shelf or grouped with items that are used together
- Keep items in consistent, designated places
- Discuss with family/caregivers where things should be placed
- Do not leave trip hazards on the floor or in the yard
- Remove unnecessary clutter from drawers, cabinets, closets, toolbox



Safety ⁴

Intervention ideas

- In the bathroom, consider sitting to bathe and having grab bars professionally installed. Add a night light to this room. Make sure the bath-mat is non-slip.
- In the kitchen, consider an adaptive cutting board and cut proof gloves for better safety with cutting foods. Use a magnifier to read expiration dates on food or have a caregiver write them largely on food packaging.
- In the rest of the house, eliminate throw rugs to prevent tripping, add night lights in all rooms, and ensure good daytime lighting.
- Learn to ask for help when you need it from a caregiver or from a stranger via the Be My Eyes App.



Driving ¹⁰

Vision changes can make driving any motorized vehicle unsafe. Avoid driving when you are experiencing intermittent vision changes.

Here are some helpful tips to maximize driving visibility:

- Clean your windshield, headlights, and glasses
- Keep a microfiber lens cloth in the car
- Replace wiper blades and refill wiper fluid often
- Drive only when well rested
- Go to optometry check-ups to make sure prescription stays up-to-date
- Ask optometrist about anti-reflective coating on glasses



Driving Rehab ^{3,5,9}

- In the state of Ohio there are vision standards that must be met to legally drive.
- A referral to a comprehensive driver evaluation with a Certified Driver Rehabilitation Specialist (CDRS) may be needed to assess driving safety from a physical, cognitive, and visual abilities standpoint.
- For visual acuity that's stable but doesn't meet Ohio BMV driving requirements, a bioptic telescope lens system to enhance distance vision is allowed in Ohio
- Average training with a bioptic telescope lens device requires 21+ hours for experienced drivers with a Driver Rehabilitation Specialist. It requires intact insight/cognition and physical driving abilities to use it safely.

Ohio BMV Vision Standards for Driving ⁹

	Visual Acuity	Visual Field	Notes
Unrestricted	20/40 or better – binocular 20/30 or better - monocular	70 degrees to one side and 45 degrees to the opposite side	
Daytime only	20/50 to 20/70 – binocular 20/40 to 20/60 - monocular	70 degrees to one side and 45 degrees to the opposite side	No driving between sunset and sunrise
Bioptic Night and Daytime without bioptic	20/70 or better - binocular and 20/40 or better using bioptic telescope	70 degrees to one side and 45 degrees to the opposite side	Must wear bioptic device between sunset and sunrise and must complete night bioptic training and testing program
Bioptic full time (day and night)	20/40 or better using bioptic telescope	70 degrees to one side and 45 degrees to the opposite side	Must wear bioptic device at all times and complete daytime and night bioptic training and testing program. Must have one year of violation-free driving after daytime licensure to qualify for night licensure.

Additional Resources

OSU Low Vision Clinic

<https://greatvision.osu.edu/clinic/main-campus-clinic/low-vision-rehabilitation>

OSU Occupational Therapy Driver Rehabilitation Program

<https://wexnermedical.osu.edu/physical-therapy-rehabilitation/rehabilitation-driving>

The National MS Society

<https://www.nationalmssociety.org/>

Vision Education Brochure from The National MS Society

<https://nms2cdn.azureedge.net/cmssite/nationalmssociety/media/msnationalfiles/brochures/brochure-vision-problems.pdf>

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