

Solutions to Low Vision Beyond Magnifiers

Phernell Walker, MBA, ABOM, NCLEC, LDO
Chair American Board of Opticianry
International Speaker and Author

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On behalf of Vision Expo, we sincerely thank you for being with us this year.

Vision Expo Has Gone Green!

We have eliminated all paper session evaluation forms. Please be sure to complete your electronic session evaluations online when you login to request your CE Letter for each course you attended! Your feedback is important to us as our Education Planning Committee considers content and speakers for future meetings to provide you with the best education possible.

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Financial Disclosure

- **Phernell Walker, MBA, ABOM, LDO, NCLEC**
 - VP of Optometric Relations, Eyefinity
 - Chairperson American Board of Opticianry (ABO-NCLE)
 - Executive Board of Directors, United Opticians Association (UOA)
 - Chair Education Advisory Board, Vision Expo, Opticon (VEE & VEW)
- **Mr. Walker has received honorarium from:**
 - Pure Optics LLC
 - Pacific University College of Optometry
 - Silmo (France)
 - Silmo (Singapore)
 - Mitsui Chemicals (Japan)
 - 49 state opticianry and optometric associations (examples: Professional Opticians of Florida, Arkansas Optometric Association, Opticians Association of Kentucky, American Optometric Association, etc....)
 - Walman University
 - Vision Expo
 - SECO conference

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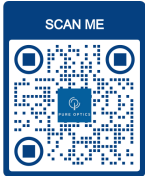


Phernell Walker, MBA, ABOM, NCLEC, LDO

- ❖ Author | Pure Optics textbook
- ❖ Chairperson American Board of Opticianry
- ❖ Treasurer United Opticians Association
- ❖ Pacific University College of Optometry | Past Adjunct Professor
- ❖ Master in Business Administration (MBA)
- ❖ Master in Ophthalmic Optics (ABOM)
- ❖ Associates Science in Ophthalmic Optics (AS)
- ❖ Licensed Dispensing Optician (WA-LDO)
- ❖ National Contact Lens Examiners Certified (NCLEC)

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Chairperson American Board of Opticianry
International Speaker and Author

web: pure-optics.com
email: phernell@pure-optics.com

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Pacific North West (PNW)
Camas, WA

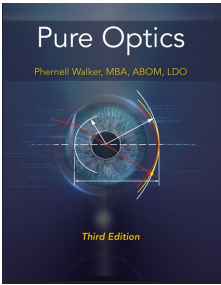
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Reference Resource

Pure Optics Third Ed.

Phernell Walker, MBA, ABOM, NCLEC, LDO
Master Optician



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What is Low Vision?

February is Low Vision month

Low Vision is not a diagnosis

Category or group of different diagnoses

BCVA range is 20/70 and 20/400

Visual Field of ≤ 20 degrees

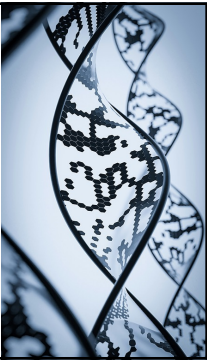
According to the CDC 7 million American have Low Vision

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Low Vision Epidemiology

- Age related Macular Degeneration (AMD)
- Glaucoma
- Diabetic Retinopathy
- Retinitis Pigmentosa



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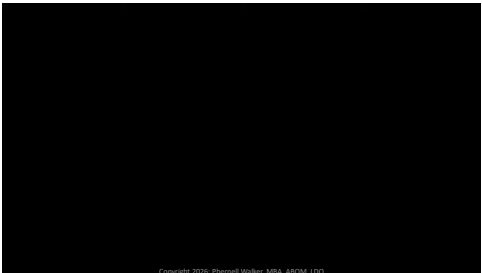
Patients Experience a Non-linear Circular Journey



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Living with Low Vision - Mr. Lawrence Harrison



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Living With Low Vision

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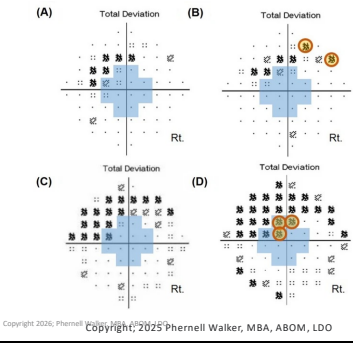
Case Study: Mr. Lawrence Harrison

-  What diagnosis caused Mr. Harrison’s Low Vision?
-  What were his symptoms?
-  What treatment plan did his optician provide?
-  What other factors can opticians do to help Mr. Harrison?

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Glaucoma



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What About
Age Related Macular Degeneration (AMD)

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Age Related Macular Degeneration (AMD)



Photo Source: Courtesy of the American Academy of Ophthalmology

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Diagnosing
Low Vision



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Low Vision Strategies and Intervention



Comprehensive Eye Examination



Low Vision Aids

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Low Vision Strategies and Intervention

| | |
|----------|--|
| Optimize | Optimize the patient's environment |
| Provide | Provide adequate lighting |
| Lighting | Task lighting |
| Avoid | Avoid glare |
| Increase | Increase the contrast between objects and their backgrounds to enhance visibility. |

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Lighting and Contrast

| | |
|----------|--|
| Optimize | Optimize the patient's environment |
| Provide | Provide adequate lighting |
| Lighting | Task lighting |
| Avoid | Avoid glare |
| Increase | Increase the contrast between objects and their backgrounds to enhance visibility. |

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Rehabilitation and Training

Refer to occupational therapists or rehabilitation specialists.

Provide training on techniques and strategies to maximize remaining vision.

Orientation and mobility training.


Daily living skills.


Use of assistive technology.


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Human Element

Access to Support Services


Collaboration with Other Healthcare Professionals


Regular Follow-up


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Calculate Magnification Needs

 $BCVA / \text{Required VA} = \text{Magnification Needed}$

 $BCVA = \text{Best Correctable VA}$

VA

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Example 1: Calculate Magnification Needs

BCVA = 20 / 400

Required VA = 20/40

$400 / 40 = 10$

Magnification Needed = 10x

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Example 2: Calculate Magnification Needs

BCVA = 20 / 200

Required VA = 20/50

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Example 2: Calculate Magnification Needs

BCVA = 20 / 200

Required VA = 20/50

200 / 50 = Magnification

Magnification Needed = 4x

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Magnification Facts

| Magnification | Net Result |
|-------------------------|----------------------------|
| Increased Magnification | Decreased visual field |
| Increased Magnification | Decreased working distance |
| Increased Magnification | Working space is reduced |

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Magnification Types

- **Size Magnification** = increase the relative object size.
- **Distance Magnification** = reduce object distance.
- **Angular Magnification** = magnifiers, binoculars, telescopes.
- **Digital Magnification** = computer monitors, digital tablet (size manipulation), over head projectors

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Treatment Options

- Handheld Magnifiers
- VDT
- Seeing Eye Dog
- Light Levels
- Life Tasks

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Life Tasks






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Microscope Types

- Half Eyes with Base In Prism
- Full field spectacles
- High Plus Power Aspheric Lenses



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Microscopes

| Advantages | Disadvantages |
|--|---|
| Both hands free | Fixed focal length |
| Wide field of view | Short working distance |
| Astigmatism Correction | Short working distance increased asthenopia |
| Binocular Vision less than 10 diopters | |

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Large Field Biconvex
Hand-held Magnifier 2x



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Clip-On Monocular
Magnifier




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Bar Magnifier

4 D w/ 2x Magnification



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Bright Field Stand
Magnifier with Zoom

2.2x to 3.4 x




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Non-Illuminated
Stand Magnifier


7 D Aspheric w, 4 D
attachment



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Illuminated
Stand Magnifier



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Telescopes

- Telescopes refract light rays leaving the lenses, making the object appear to be coming from the same direction closer to the eye
- This magnifies objects (magnification)

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Telescopes Power Designation

7 x 20, 7.5


- Designated by Magnification Power and Field of View
- 7 = image is magnified 7 times larger
- 20 = objective is 20 mm
- 7.5 = field of view is 7.5 degrees

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Galilean Telescope

20-degree Field
PD range = 60 to 80 mm



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Prism Eyewear


Availability

- +4 D, 6 D Δ BI
- +6 D, 8 D Δ BI
- +8 D, 10 D Δ BI
- +10 D, 12 D Δ BI

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Video Magnifier



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Orcam Technology



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Headlight LED
with
Attachments



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