

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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1

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

2

Financial Disclosure

- **Phernell Walker, MBA, ABOM, LDO, NCLEC**
 - VP of Optometric Relations, Eyeinfinity
 - 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

3



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)

4

SCAN ME

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5

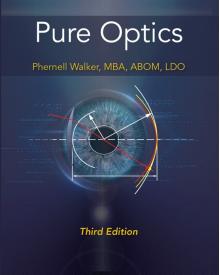
A scenic view of Mount Hood, a snow-capped mountain, rising behind a harbor filled with many boats and small buildings, likely in Camas, Washington.

6

Reference Resource

Pure Optics Third Ed.

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Master Optician



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7

What is Low Vision?

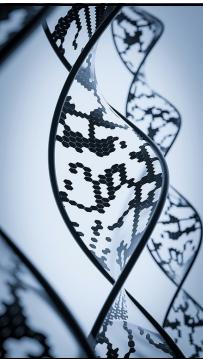
- February is Low Vision month
- Low Vision is not a diagnosis
- Category or group of different diagnoses
- BCVA range is 20/70 and 20/400
- Visual Field of < 20 degrees
- According to the CDC 7 million American have Low Vision

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Low Vision Epidemiology

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



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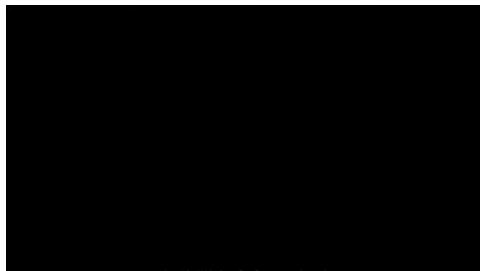
Patients Experience a Non-linear Circular Journey



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Living with Low Vision - Mr. Lawrence Harrison



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Living With Low Vision

21

Case Study: Mr. Lawrence Harrison



What diagnosis caused Mr. Harrison's Low Vision?



What were his symptoms?



What treatment plan did his optician provide?

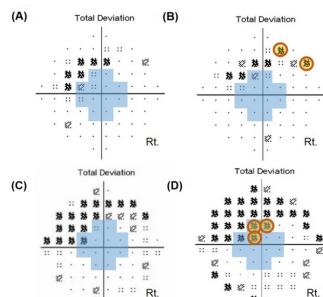


What other factors can opticians do to help Mr. Harrison?

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Glaucoma



23

What About Age Related Macular Degeneration (AMD)

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Age Related Macular Degeneration (AMD)



Photo Source Courtesy Of: 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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27

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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31

Calculate Magnification Needs

-  BCVA / Required VA = Magnification Needed
-  BCVA = 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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36

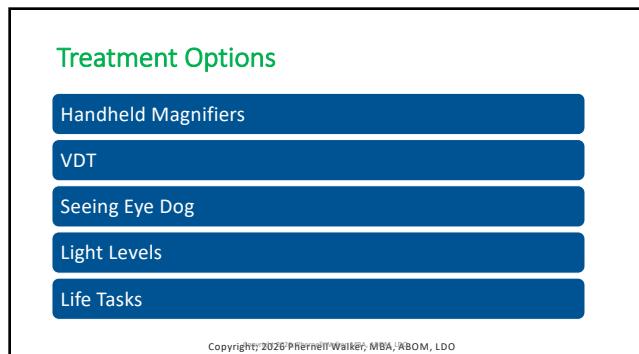


Magnification Types

- **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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37



38



39

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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41

Large Field Biconvex Hand-held Magnifier 2x

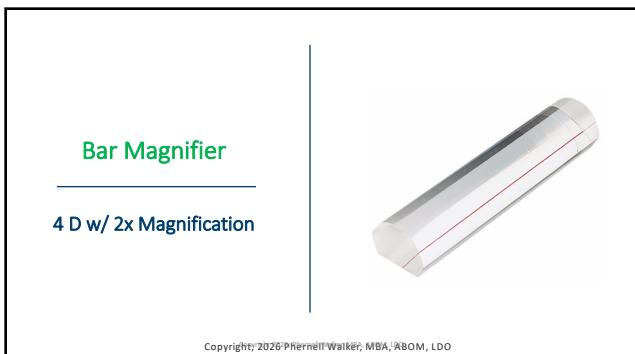


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42



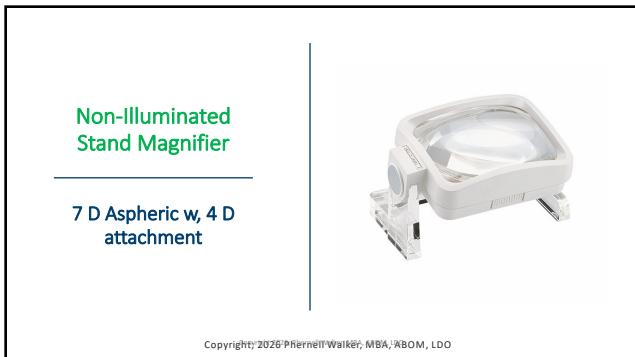
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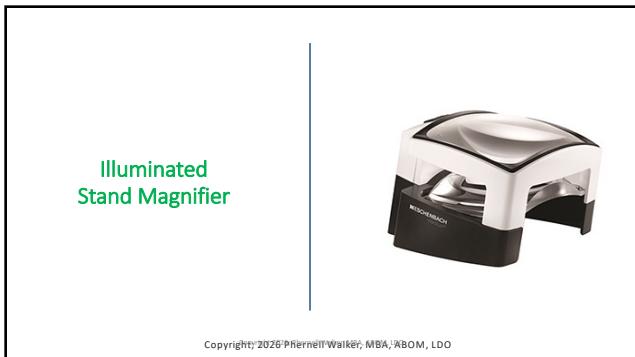
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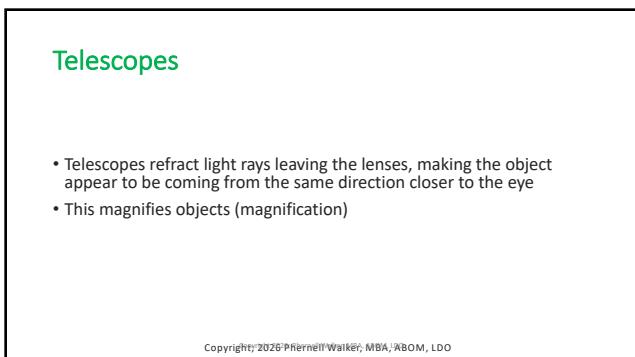
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46



47



48

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



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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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53

Headlight LED with Attachments



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54

Questions and Answers

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55



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56

