Solutions to Low Vision Beyond Magnifiers

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Renowned International Speaker
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1

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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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2

Financial Disclosure

- **Phernell Walker, MBA, ABOM, LDO, NCLEC:**
  - VP of Optometric Relations, **Eyefinity**
  - Chair-elect of the **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

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3

Phernell Walker, MBA, ABOM, NCLEC, LDO

- Author | Pure Optics
- American Board of Opticianry | Vice Chair Board of Directors
- 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)
- Opticians Association of America | Board of Directors

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4

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5

Pacific North West (PNW)
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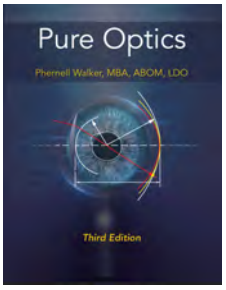
6

Reference Resource

Pure Optics Third Ed.

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



7

What is Low Vision?

- 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 6 million American have Low Vision

8

Low Vision Epidemiology

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

9

Living with Low Vision - Mr. Lawrence Harrison

10

Living With Low Vision

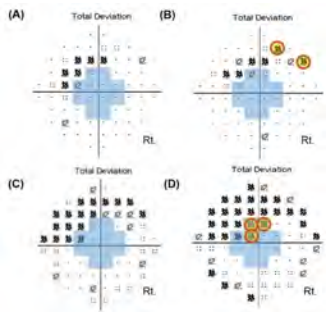
11

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?

12

Glaucoma



13

What About Age Related Macular Degeneration (AMD)

14

Age Related Macular Degeneration (AMD)

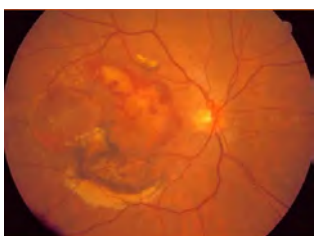
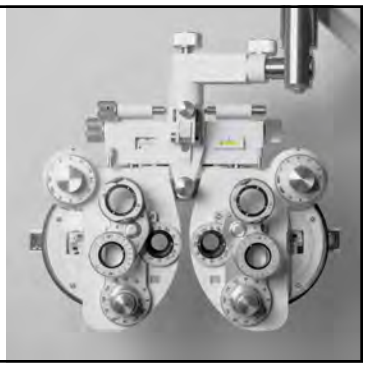


Photo Source Courtesy of : American Academy of Ophthalmology

15

Diagnosing Low Vision



16

Low Vision Strategies and Intervention

Comprehensive Eye Examination

Low Vision Aids

17

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.

18

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.

19

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.

20

Human Element

- Access to Support Services
- Collaboration with Other Healthcare Professionals
- Regular Follow-up

21

Calculate Magnification Needs

- BCVA / Required VA = Magnification Needed
- BCVA = Best Correctable VA
- VA

22

Example 1: Calculate Magnification Needs

- BCVA = 20 / 400
- Required VA = 20/40
- 400 / 40 = 10
- **Magnification Needed = 10x**

23

Example 2: Calculate Magnification Needs

- BCVA = 20 / 200
- Required VA = 20/50

24

Example 2: Calculate Magnification Needs

- BCVA = 20 / 200
- Required VA = 20/50
- 200 / 50 = Magnification
- **Magnification Needed = 4x**

25

Magnification Facts

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

26

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

27

Treatment Options

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

28

Microscope Types

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

29

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	

30

Large Field Biconvex

Hand-held Magnifier 2x

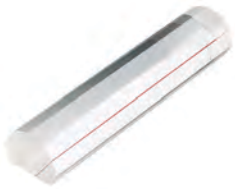
31

Clip-On Monocular Magnifier

32

Bar Magnifier

4 D w/ 2x Magnification



33

Bright Field Stand Magnifier with Zoom

2.2x to 3.4 x

34

Non-Illuminated Stand Magnifier

7 D Aspheric w, 4 D attachment

35

Illuminated Stand Magnifier

36

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)

37

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

38

Galilean Telescope

20-degree Field

PD range = 60 to 80 mm

39

Prism Eyewear

Availability

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

40

Video Magnifier

41

Orcam Technology

42

Headlight LED with Attachments

43

Questions and Answers

44