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Evaluation of low vision patient



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Introduction

- The purpose of low vision assessment is to assess the residual vision present and correlate it with the individuals social , educational , vocational.
- Low vision assessment is to enable an individual utilize his or her residual vision to its maximum potential.



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STEPS OF LOW VISION ASSESSMENT

- 1.FUNCTIONALCLINICAL EVALUATION**
- 2.EVALUATION**
- 3.VISION REHABILITATION**



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CLINICAL LOW VISION EVALUATION

A. OBSERVATION

- 1. Mobility.
- 2. Fixation.
- 3. Posture.
- 4. Psychology of patient.



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B. INTERVIEW AND HISTORY TAKING

- It is critical for the development of appropriate and realistic evaluation and management strategies. Following points should be covered.

General information

- Demographic Information
- Interaction between the patient and the accompanying family member.
- Marital Status/living situation



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Ocular History

- progression or treatment.
- Diagnosis and onset of symptoms
- Past, current, or planned surgeries or treatments
- Stability of vision



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- Family history of eye disease.
- Previous history of eye disease or vision problems.
- Current or previous use of spectacles, contact lenses, or low vision aids.



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Systemic History

- Diabetes.
- General health review
- current medications
- Hearing impairment or other handicapping conditions
- Self-care needs (e.g., ileostomy, diabetes)



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- Orthopaedic handicaps
- Psychological considerations (e.g., denial, depression, co-dependency, or suicidal tendencies)



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Educational or Vocational status

- School requirements.
- Seeing blackboard.
- Computers.
- Reading instrument.



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- Homemaker.
- Client considered retiring or resigning .
- Social activities hampering.



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Financial Status

- It's important to understand the commitment to the device
- Basic needs of the client
- Affordability of the device



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Task Related History

- Distance-street signs , traffic lights , faces and watching television.
- Intermediate-seeing the computer, food on the plate.
- Near-: Reading books, newspapers mails, prices.



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C. VISUAL ACUITY

- Helps determine best corrected visual acuity .
- Monitor the effect of stability and progression.
- Teach basic concepts and skills.
- Classify patients as “legally blind” .



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Fig no 1 : Visual acuity



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C1- VISUAL ACUITY ASSESSMENT (DISTANCE)

1. Traditional methods of testing acuity are not practical for low vision patients.
2. Vision charts designed for low vision are hand held or movable rather than fixed or projected.
3. ETDRS charts are recommended.



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4. Patient feel more confident .
5. The hand held charts avoids glare, give better contrast .
6. Actual testing distance in the numerator and optotype size in denominator.
7. Examined first in daylight condition



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LogMAR charts

- It uses a logarithmic scale.
- LogMAR means Log of Minimum angle of Resolution.
- Calculation of required magnification easy .
- Five letters per line. There is constant size progression ratio of $5/4$ and each line is 1.25X bigger/smaller than previous.



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Advantages

- 1. Equal number of optotypes per line.
- 2. Equal logarithmic interval between lines
- 3. Equal average legibility for each line.
- 4. Consistent spacing between letters and lines i.e.



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Fig no 2 :Visual acuity chart



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LOW CONTRAST VISUAL ACUITY

1. The vast majority of our visual interaction with the world involves resolving low contrast details.
2. Bailey – Lovie low contrast chart, Pelli Robson charts; symbol charts – Lea's symbol charts , hiding Heidi charts.
3. When optotype based letter charts are used for assessing contrast sensitivity.



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- 4 . Practical relevance of low vision contrast.
- 5 . Patients feel relieved to see a clinical test that equates to their experience.



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C2- NEAR ACUITY ASSESSMENT

- Reads certain typeset of a smaller size from a nearer distance.
- The distance is accurately recorded.
- The typeset size is denoted in M units.
- Reading acuity is the patient's ability to read a more congested and complex types.



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Fig no 3: Near visual acuity chart



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Lighthouse Near Visual Acuity Test (SECOND EDITION)
MODIFIED ETORS WITH SLOAN LETTERS
 For Testing at 40 cm (16 inches)

Chart 1

Letter Size (metric)	Snellen Distance Equivalent	
	Diometers of Add For 1 M at 40 cm	at 20 cm
8.0 M	20/400 200	20/800 400
6.3 M	20/320 160	20/630 300
5.0 M	20/250 120	20/500 250
4.0 M	20/200 100	20/400 200
3.2 M	20/160 80	20/320 160
2.5 M	20/125 60	20/250 120
2.0 M	20/100 50	20/200 100
1.6 M	20/80 40	20/160 80
1.25 M	20/63 30	20/125 60
1.0 M	20/50 2.50	20/100 50
.8 M	20/40	20/80 40
.6 M	20/32	20/63 30
.5 M	20/25	20/50 2.50
.4 M	20/20	20/40
.3 M	20/16	20/32

Instructions: See above test distance required a minimum add of +3.00. If the patient cannot see the top line, move test distance to 20cm with a minimum add of +1.00. Similarly, if a 10cm test distance is required, the minimum add is +1.00.

Special test distance and other size from the left column. Examples: 40/80, 20/40

The columns on the right provide reference to Snellen distance equivalent for two test distances, diometers of add for the 40 cm test and for two test distances.

THIS COMPLIMENTARY DISPOSABLE CHART IS AVAILABLE IN BULK PACK, UNFOLDABLE PLASTIC WITH A 40-CM NON-STRETCH CORO. ORDER CASE NO. 1113. 1-800-628-9548

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Fig no 4: Lighthouse near visual acuity test chart



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REFERENCE

Guidelines for comprehensive management of low vision in India , 2013 ,chapter no:7 , pg. no 17 to 29 .