

قسم تقنيات البصريات

اخطاء الانكسار2

المرحلة الثانية

المحاضرة الرابعة

Department of Optics Techniques

Lecture4

Low vision

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Low vision

Low vision: Any person having presenting visual acuity in better eye $\leq 6/18-3/60$ is defined as low vision as per WHO definition. means having impaired vision that cannot be corrected by glasses, surgery or medication. It isn't blindness as limited sight remains. Low vision includes different degrees of sight loss, from blind spots, poor night vision and problems with glare to an almost complete loss of sight.

Table Definitions of Vision Loss

| <i>Categories</i> | <i>Presenting Visual Acuity in Better Eye</i> |
|--|---|
| <i>Normal vision</i> | 6/6-6/12 |
| <i>Low vision (WHO definition)</i> | 6/18-3/60 |
| <i>Welfare definition of legal blindness</i> | <6/60 |
| <i>EVI (early visual impairment/mild VI)</i> | <6/12-6/18 |
| <i>MVI (moderate visual impairment)</i> | <6/18-6/60 |
| <i>SVI (severe visual impairment)</i> | <6/60-3/60 |
| <i>WHO definition of blindness</i> | <3/60 |

low vision as two categories:

•"**Partially sighted**": the person has visual acuity between 20/70 and 20/200 with conventional prescription lenses.

•"**Legally blind**": the person has visual acuity no better than 20/200 with conventional correction and/or a restricted field of vision less than 20 degrees wide.

The ratio measurement of vision describes visual acuity, or the sharpness of vision, at 20 feet from an object. For example, having 20/70 vision means that you must be at 20 feet to see what a person with normal vision can see at 70 feet

The types of low vision

The type of low vision that you have depends on the disease or condition that caused low vision. The most common types of low vision are:
Central vision loss (not being able to see things in the center of your vision)

Peripheral vision loss (not being able to see things out of the corners of your eyes)

- Night blindness (not being able to see in low light)
- Blurry or hazy vision

causes low vision

There may be one or more causes of low vision. These are usually the result of disorders or injuries affecting the eye, but the most common causes are:

Age-related macular degeneration (AMD)

Cataracts

Diabetic retinopathy (a condition that can cause vision loss in people with diabetes)

Glaucoma

Albinism

brain injury

inherited disorders of the eye, including retinitis pigmentosa

Low vision is more common in older adults because many of the diseases that can cause it are more common in older adults. Aging doesn't cause low vision on its own. Low vision may be preventable for patients with diabetes, and some patients with macular degeneration and glaucoma may be treated to prevent the further vision loss.

MANAGEMENT OF LOW VISION WITH DEVICES:

A low-vision aid refers to an optical device which improves or enhances residual vision by magnifying the image of the object. The calculation of magnification forms the basis of any low-vision optical/non-optical device.

1. Relative distance magnification. Simply by taking the object closer to the eye, it will appear bigger.
2. Angular magnification. Use of hand magnifiers, stand magnifiers, or telescopes falls under this category.
3. Relative size magnification. Making the object larger, like making the textbook print size larger, is an example of this magnification. It is categorized into two broader classifications:

Optical devices

Non-optical devices

Recent advances of electronic devices can be classified into an additional third group.

EXAMINING THE LOW-VISION PATIENT

❖ Vision Assessment for Distance and Near

Estimating visual acuity, the best corrected visual acuity is important for magnification calculation of optical devices. The assessment is not only on quantity of vision but also on quality of vision, which relates to contrast sensitivity and glare acuity. The acuity recording is different than the regular Snellen's charts. While measuring acuity counting, finger documentation is not the right way of recording the visual acuity in these patients. The clinic should have log MAR charts for distances and near. These charts are made for use for 4 m. However, if visual acuity is lesser, the chart is brought closer to half the distance, that is 2 m, or still distance. Recording near visual acuity is also done with special low-vision charts.