
POSITION PAPER

LOW VISION

March 2011

Low vision

Low vision describes a visual impairment that restricts the ability to perform visual tasks in everyday life. This handicap cannot be corrected by ordinary glasses, contact lenses or medical intervention. Obvious types of visual impairment are the loss of visual acuity and the loss of visual field. Other examples include loss of contrast sensitivity, abnormalities in colour vision and night vision, as well as an increased sensitivity to light (such as disability glare or photophobia).

Definitions

For the definition of visual impairment, the World Health Organisation (WHO) currently offers two classification systems.

The first system is the ICD-10, the international statistical classification of diseases and related health problems. The ICD-10 describes visual impairment, which includes blindness and low vision, in Chapter VII, H54 (9):

- *Low vision* is defined as visual acuity of less than 0.3 (6/18, 0.5 logMAR) but equal to or better than 0.05 (3/60, 1.3 logMAR), or a corresponding visual field loss to less than 20 degrees in the better eye with best possible correction.
- *Blindness* is defined as visual acuity of less than 0.05 (3/60, 1.3 logMAR), or a corresponding visual field loss to less than 10 degrees in the better eye with the best possible correction.

The second system is the ICF, the international classification of functioning, disability and health that complements the ICD-10 with a more functional perspective on disorders of the visual system. The ICF makes a clear distinction between the concepts impairment, disability and handicap.

- *Impairment* is defined as “any loss or abnormality of psychological, physiological or anatomical structure or function”.
- *Disability* is defined as: “any restriction or lack (resulting from an impairment) of the ability to perform an activity in a manner or within a range considered normal for a human being.”
- *Handicap* is defined as “a disadvantage for a given individual (resulting from an impairment or disability) that limits or prevents the fulfillment of a role that is normal (depending on age, sex and cultural factors) for that individual.”

In 2002, the International Council of Ophthalmology adopted a resolution wherein the following terminology was recommended:

- *Blindness* – to be used only for total vision loss and for conditions where individuals have to rely predominantly on vision substitution skills.
- *Low Vision* – to be used for lesser degrees of vision loss, where individuals can be helped significantly by vision enhancement aids and devices.
- *Visual Impairment* – to be used when the condition of vision loss is characterised by a loss of visual functions (such as visual acuity and visual field) at the organ level. Many of these functions can be measured quantitatively, e.g. loss of visual acuity.
- *Visual Disability* – to be used when the condition prevents the undertaking of specific visual tasks e.g. loss of the ability to read a newspaper.
- *Visual Handicap* – to be used when the condition is described as a barrier to social participation, e.g. loss of a driving licence
- *Functional Vision* – to be used when the vision loss is defined in terms of the individual's abilities with regard to Activities of Daily Living (ADL). Functional vision therefore applies to the individual and not to the visual system.
- *Vision Loss* – to be used as a general term, including both total loss of vision (blindness) and partial loss of vision (low vision), characterised either on the basis of visual impairment or by a loss of functional vision.

Referral of the client with low vision

The referral of patients for low vision services varies from country to country. Some countries require ophthalmological referral in order to access state funded support, others do not. Some countries require ophthalmologists to refer to specific low vision clinicians such as optometrists and/or opticians. In some countries there is inter-referral between optometrists in order that patients access the most experienced clinician. As a general rule optometrists should feel free to accept self-referrals if that is legally permitted in their jurisdiction. A general rule might be that referral into low vision services should be considered if the patient is unable to read a newspaper or to perform other visual tasks even with their best spectacle correction.

Assessment of the client with low vision

As part of a comprehensive low vision assessment, the optometrist or optician will assess:

- the client's ocular diagnosis and treatment received
- any recent changes in the client's eye disease, with particular attention to whether onward referral to an ophthalmology clinic is required
- specific difficulties which the client is having with tasks of daily living, or with occupational, educational or recreational activities
- the contact which the client has made with other professionals and, where appropriate, whether the client has been registered as sight impaired or similar
- the client's emotional wellbeing and quality of life

Visual Assessment

Visual tests will be performed, which may include the measurement of some or all of:

- distance visual acuity
- contrast sensitivity
- near visual acuity
- reading speed
- performance on 'real-world' tasks
- visual fields
- colour vision
- glare sensitivity
- refractive error
- eccentric viewing angle or preferred retinal locus position

Refraction

Refraction is an essential component of any low vision service. Refraction determines the best possible visual outcome for visual acuity and contrast sensitivity measures before magnification is applied. Refraction may encompass some or all of the following:

- objective (retinoscopy or auto-refraction)
- subjective (with appropriate bracketing steps in lens power and with appropriate attention to astigmatism using appropriate tests, e.g. higher power cross-cylinder)
- assessment of binocularity and the presence of rivalry
- near text reading ability with standard unit of near addition (typically +4.00DS at 25cm or appropriate power depending on the level of accommodation present).

Magnification

Having determined a visual need (in assessment, the target size of print) the magnification required to approximately reach this level of print size can be calculated from the visual acuity at the refraction end point. At this point different magnifying systems may be trialled from hand-held, stand, spectacle mounted, electronic etc to determine the ergonomic optimum for the specific needs of the client. A comprehensive service would have access to most magnification systems or know and be able to refer on to an agency or individual who could.

Management, training and cooperation with other professionals

In low vision services it is essential that the low vision client first understands the nature of their reduced visual function, before they can become able to start using different management and training techniques. The training or education of the low vision client can be performed by different professionals and will most likely include a management strategy for:

- Reduced visual acuity and ocular motility problems
- Central visual field defects
- Peripheral visual field defects
- Reduced contrast sensitivity and heightened glare sensitivity

Training will mostly be undertaken with some optical or electronic device and the most extensive training will often be needed for persons with central visual field defects. In some systems of low vision services this is performed as part of a multi-disciplinary team at a low vision clinic and in other cases referral to other agencies may be needed. Multi-disciplinary cooperation or referral for training is usually undertaken by low vision therapists, occupational therapists or other educational professionals.

In dealing with the emotional aspects of the vision loss it is, in many situations, crucial for the optometrist or optician to have interactive cooperation with counsellors or social workers. This will also be important for the client in accessing various social or legal benefits related to the reduced visual function, e.g. registration or certification as visually impaired.

Working together with other professionals will give the optometrist or optician an increased likelihood of addressing specific rehabilitation goals. It is also important to schedule optometric and rehabilitation follow up visits to evaluate developing needs for alternative devices and confirm changes in the status of the visual function.

Concluding Summary

The provision of services to low vision clients is amongst the most multidisciplinary of all optometric and optical disciplines. It is very rare that a single clinician or professional holds all of the answers or that a client can access all necessary services from one professional. Accordingly, the mark of a good low vision service is one that can facilitate or deliver all necessary components that may include: diagnosis or referral for diagnosis (not including

treatment); assessment of need; prescription and supply of spectacles and low vision devices; training and education; and other ancillary but essential components. In particular, it is important to stress the need to recognise and refer for medical diagnosis and treatment as and when necessary and that refraction is an essential component of any good low vision service.

The optometrist is ideally placed between community and hospital care and between medical and rehabilitation disciplines and has a key role to play in the rehabilitation of clients with low vision because of the ability to examine, diagnose and refract. Low vision is a rewarding and valuable subspecialty within optometry and optics which we encourage optometrists and opticians to consider adding to their routine practice.

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