

## Low vision: we can all do more



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Despite all the treatments, operations, and medication at our disposal, there is still a significant number of people whose sight we cannot fully restore.

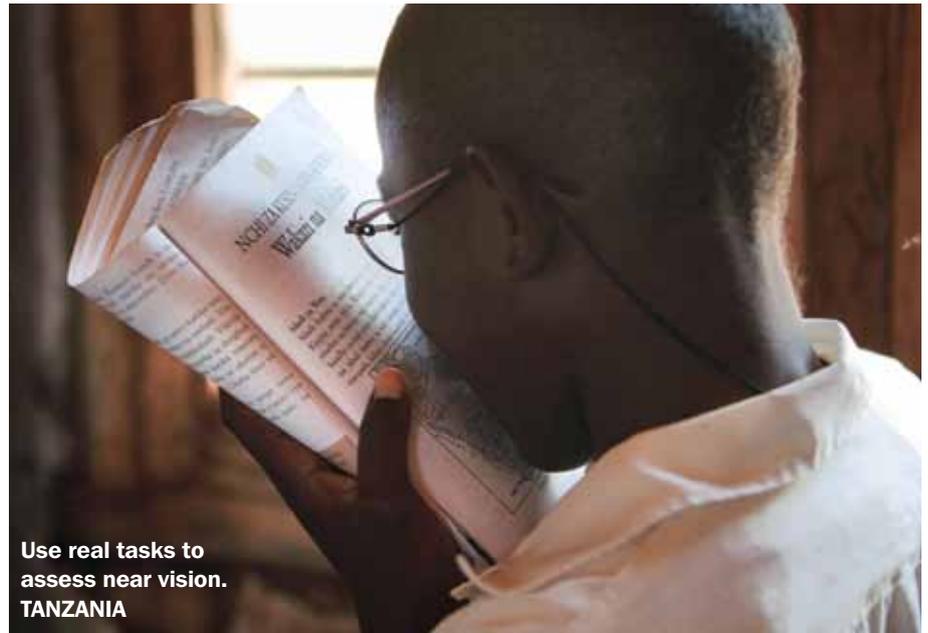
What happens to these patients once they leave our care? Without the necessary support, advice, and low vision devices, their remaining vision will not be very good; this can make life a struggle.

Support may be difficult to find, as low vision services are often inadequate or inaccessible in many low- and middle-income countries. Professionals, such as rehabilitation workers, ophthalmologists, mid-level eye care workers, optometrists/refractionists, and special education teachers, may not know what to do about people with low vision, leaving them with no-one else to turn to.

Individuals who can only see light or movement of large objects will need rehabilitation that focuses on non-visual strategies for learning and daily tasks. However, there are many people who have slightly better vision, but are still classified as blind, who have the potential to use their sight. These people could benefit from low vision care, which may include refraction, provision of magnifiers, and/or environmental modifications.

The World Health Organization defines a person who needs to be assessed for low vision care as someone “who has impairment of visual functioning even after treatment and/or standard refractive correction, and has a visual acuity of less than 6/18 down to and including light perception, or a visual field of less than 10 degrees from the point of fixation, but who uses, or is potentially able to use, vision for the planning and/or execution of task.”

The important part of this definition is that people should only be assessed for low vision interventions once all other treatments the person needs (surgical, medical



Karin van Dijk

and/or optical) have been given. The definition also emphasises the importance of vision for day-to-day functioning.

People who may be able to benefit from low vision care will want to do a range of different things. In many low- and middle-income countries, for example, many people with low vision are aged over 50 years and cannot read or write. They will have different needs, and require different services, compared to children or adults in employment.

Low vision has a significant impact on

people's lives. People with low vision may struggle to look after themselves without help. Having low vision affects their status in the eyes of others and can make social situations difficult. It reduces the ability of people to pursue an education, to look after their children, and to earn an income. People with low vision are also at greater risk of falls and death.

With our support, people with low vision can make better use of their sight to do the things they want and need to do. We hope this issue will show you how.

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## LOW VISION

# Understanding low vision



#### Clare Gilbert

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### Who is likely to have low vision?

As a rule of thumb, the following people are likely to need low vision services and must be referred wherever possible:

- All children who have undergone bilateral cataract operations, both those with pseudophakia and those with aphakia
- People with diabetic macular oedema whose vision remains poor despite laser treatment
- People with age-related macular degeneration
- Children with oculocutaneous albinism
- People with optic atrophy, whatever the cause
- Any person who still has difficulty performing their daily activities because of their vision, even after treatment and refraction.

### What does low vision look like?

People with low vision are affected in different ways. They may suffer from some or all of the following:

- Severely reduced visual acuity
- Blurred vision
- Visual field loss: central or peripheral
- Loss of contrast sensitivity
- Increased light sensitivity.

Many people with low vision suffer from blurred vision (Figure 1), for example if they have scarring on their corneas.

People with optic atrophy or age-related macular degeneration will have loss of central visual acuity (Figure 2), which means that tasks requiring good central vision will be difficult. For example, reading, writing, threading a needle and sewing, putting on make-up, recognising people, seeing where their food is on the plate and whether they have finished eating, seeing if their clothes are clean, finding their own pair of shoes. If they have a full field of peripheral vision then mobility will be less of a problem.

Someone with glaucoma or retinitis pigmentosa will have constricted visual fields, i.e. loss of peripheral vision (Figure 3). This makes it difficult to move around without bumping into objects on the floor. People may have difficulty finding things they have dropped. Reading may still be possible, but difficult.

Loss of contrast sensitivity (Figure 4) can have a very big impact on someone's visual function, making it difficult to recognise faces or find food on a plate of similar colour.

Increased light sensitivity makes it very difficult for people to see detail or make sense of what they see if they are in bright light, or glare (Figure 5).



**Figure 1. Blurred vision.** People with blurred vision (right) have difficulty seeing details, both at distance and nearby; they often have problems with glare. Printed materials and colours might seem faded.



**Figure 2. Loss of central vision.** "Is the man sitting down my husband, and is there a seat for me?"



**Figure 3. Loss of peripheral vision.** "How many other people are there in the room?"



**Figure 4. Loss of contrast sensitivity.** With normal contrast sensitivity (left), it is easy to recognise faces. With reduced contrast sensitivity (right) this becomes more difficult.



**Figure 5. Increased light sensitivity.** This is how a street scene in bright sunlight would look to someone who has increased light sensitivity.



# Low vision: the patient's perspective

For this issue on low vision, the *Community Eye Health Journal* contacted low vision practitioners in India, Tanzania, Nepal, and Peru to help gather the views of eighteen people attending their low vision clinics. The people varied in age from 14 to 81, and suffered from a range of vision problems including nystagmus, retinitis pigmentosa, diabetic retinopathy, and bilateral aphakia.

The interviewees (or their parents) described how their low vision had affected them before treatment, how their life changed after they received low vision care, and what they felt they still needed.

We hope that these experiences of people with low vision will highlight what is important in a low vision service.

## Before

Before they received low vision care, the adults said they had been unable to do their desired activities, such as driving or reading. They were worried about their vision and had negative feelings, including stress, depression, anger, and frustration. They had also felt dependent on their family, and that they were a burden to the family. The adults had also struggled to accept their condition as being irreversible.

School-age children and young adults said that they had been unable to attend school, had to drop out, or had faced great difficulties in their schooling, such as being unable to take examinations. Some of them had been treated as blind and taught to use Braille.

These young people had also felt very dependent on their families and had to stay home much of the time.

One of the biggest problems they had faced was the way society viewed them. They were victims of bullying, name-calling, and had been accused of pretending to have a problem.

## Care provided

The care provided to both children and adults consisted of training in better use

Hari Bdr Thapa



**Damodar BC  
Nepal (22)**

"Society used to view me in a negative way ... I used to wonder how I would carry on my life. [But now] there is a positive change in which society views me. Most of the time, I get to hear people say, 'People with low vision can also do good deeds and can work like normal people.'"

Meritza Zuzasabar De la Cruz



**Maribel Tomateo Falcon  
Peru (27)**

Low vision services helped her to set realistic goals. "The visual rehabilitation helped me a lot, mostly to be aware of my limitations, to accept them and to know up to where I can develop and set my goals."

Elizabeth Kishiki



**Mbaraka Omary  
Tanzania (18)**

"I have really started living. With my glasses, I can recognise the faces of my friends and teachers. More importantly, I can watch football and see faces of my favourite stars. With my magnifier, I can read even the smallest letters. I have become a different person now."

Elizabeth Kishiki



**Abdi Kajembe  
Tanzania (9)**

Thanks to low vision services, school is now a lot easier for him. "With my spectacles, I can sit at my front desk and read well on the blackboard and in books, and I can see people well."

## Impact

Adults described how low vision services had resulted in the following:

- Greater independence, confidence, courage, hope, and dignity
- A better understanding of the reality of the visual loss.

Children talked about how the low vision service had helped them with the following:

- Starting school
- Doing desired activities, such as reading print, even small print
- Increased independence, for example being able to read the blackboard and learning to write
- Improving the attitudes of peers and teachers "... who now see I can do many things."
- Better social interaction, for example "... recognising the faces of my friends."

## What more is needed?

- Some people still lacked the confidence to use their optical devices in public
- Most people also wanted to be informed if there were new technological developments, and hoped for lower prices for software and electronic low vision devices

- Some children did not know enough about their condition and wanted someone to explain it to them in terms they could understand.

In our experience, it is helpful to keep in touch with people who have been helped by low vision services. They can be excellent advocates for the development of better services and may help to convince others with low vision to seek help.

Children who successfully use a low vision device can also inspire other children who are still struggling.

*The interviews were arranged, transcribed, and translated by:*

- Rosario Espinoza, Peru
- Hari Thapa, Nepal
- Elizabeth Kishiki, Tanzania
- Joseph Eye Hospital LV team, India.

*The article was written by Karin van Dijk.*

of vision, provision of optical devices, and suggestion of environmental modifications. Specific interventions included:

- Changes such as sitting near the window or using a lamp, sitting near the blackboard, using a stand for better reading/writing position and more comfort, increasing contrast through better light, using a reading slit, and using a cap to reduce glare out of doors
- Giving advice about improving the environment through painting lines or applying tape to improve contrast
- Someone taking the time to clearly explain the person's eye problem and prognosis to him or her
- Counselling, particularly for adults who were able to see before and have lost a lot of their vision. This involved listening, discussing the implications of the vision loss and the effect on their life and emotions, and giving advice if needed.



# When someone has low vision



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As clinicians, being faced with a patient whose vision we cannot improve any further can make us feel like a failure.

However, there are many ways to help such a person with low vision.

Figure 1 shows the difficulties someone is likely to have, based on their distance visual acuity, and what support they may be able to benefit from. These include optical devices, non-optical devices, advice on environmental modifications, and referral to rehabilitation and (special) educational services.

In this article, we will show you how to assess a person with low vision and find out what it is they really want to be able to do. We will then outline the interventions that are possible, and give some guidelines.

## Before you start

When you are faced with a person with poor vision, it is important to check that everything possible has been done to improve their vision, and that they really do need low vision services. Here is a checklist:

- 1 Has the person's diagnosis been confirmed by an ophthalmologist or other eye care worker?



Karin van Dijk

Teaching the use of an illuminated hand magnifier. PHILIPPINES

- 2 Has all the medical, surgical, and optical treatment possible already been given?
- 3 Has the prognosis for vision been confirmed by a medical professional?

If the answer to any of these questions is 'no', refer the person to the appropriate services, where possible.

If we know the diagnosis, this will give us some idea of the likely impact on the person's visual function and thus on their main visual needs (see page 2).

Ideally, people with low vision should have undergone refraction, and be wearing their spectacles, before they are given low vision support. In practice, many eye care practitioners find it too challenging and/or time-consuming to refract someone with low vision. This is why refraction should always form part of a standard low vision assessment.

Once you have established that the person does need low vision services, you can begin the low vision assessment.

The following are the steps that normally form part of a low vision assessment:

- Taking a history
- Explaining the eye condition
- Determining the patient's needs
- Performing an accurate refraction
- Assessing visual functions
- Magnification needed
- Designing a management plan
- Referral for further training and support and contacting educational or rehabilitation services if needed.
- Selecting low vision devices and training the person in their use
- Suggesting non-optical interventions and environmental modifications.

Figure 1. How the type of assistance provided is influenced by distance visual acuity

Spectrum of distance visual acuity (ideally, with the person wearing the correct prescription)				
Can see 6/18	< 6/18; can see 6/60	<6/60; can see 3/60	<3/60; can see 0.1/60	< 0.1/60
Difficulties with activities of daily living: dressing, eating, walking around, recognising faces				
+/-	+	++	+++	+++++
Potential to benefit from optical devices such as magnifiers				
+/-	+	++	++	Highly unlikely
Potential to benefit from making changes to the environment (see page 12)				
+/-	+	++	++	++
Need for rehabilitation and special educational services				
+/-	+	++	+++	+++++

## Taking a history

This is an important part of the low vision assessment and provides an opportunity for you and the patient to get to know each other.

Encourage the patient to talk about their problems. Asking open-ended questions will help; these are questions starting with words such as 'when', 'what', 'how', and 'where' – questions which don't have 'yes' or 'no' as an answer.

Ask questions about:

- Their own eye health – how their vision is affected, what makes it worse or better and how it has changed over time
- Their general medical history, their mobility, and their medications
- Their family's eye health history
- Their occupation and hobbies
- Any previous low vision assessments.

Here are examples of questions you can ask about their eye health and vision:

- When did you first notice a problem with your vision?
- What kinds of problems have you noticed?
- What problems do you have in the day?
- What problems do you have at night?
- What changes, if any, have you noticed in your vision?
- What makes your vision worse?
- What makes your vision better?

## Explaining the eye condition

Some people with low vision will not have had their eye condition explained to them, or they may not have understood the explanation at the time.

It is always worthwhile taking time to explain the eye condition again, in terms the person can understand. Even if patients with low vision have heard it all before, they will probably find it reassuring to have you explain it again, thereby confirming what they have heard from others.

Be positive. Emphasise that they have some residual vision and that you and your colleagues are committed to helping them make the most of that vision. Reassure them that they cannot harm their residual vision by using it – they will **not** 'wear out' their eyes!

## Determining the patient's needs

Start on a positive note by first asking what they can still do, before going on to ask what they may be struggling with.

Ask about their mobility, activities, and participation. Here are some examples.

### Mobility

- Can you walk beyond the house without assistance?

## CASE STUDY 1

*This case study, and those that follow, are of actual people and demonstrate practical low vision assessments and interventions. They show how the diagnosis and history can guide us in setting priorities for assessment and knowing which interventions, especially non-optical, might benefit the person.*

**A 60-year old retired professor** with age-related macular degeneration complained that he could no longer read small text, which had been an important part of his life. He also taught college students and worked extensively on the computer at home. On further questioning, it became clear that he also had difficulties in communicating with others. From the history, interview, and diagnosis, we knew that the man had central field loss and reduced contrast sensitivity, which would require improved lighting and contrast.

The low vision team assessed his best corrected distance and near visual acuity, contrast sensitivity, reading and writing ability, and the extent of his field loss.

His visual acuity, tested on a logMAR chart, was 6/36 (0.8 logMAR) in the better eye, and with a +2.00D add his

near vision was 1M (N8) at 15 cm. His near acuity improved to 0.63M at 25 cm with an add of +3.00D, a reading lamp, and a reading slit. With these, he was also able to read the newspaper and his writing was legible.

The professor was advised to wear his bifocal glasses constantly, to read with a table lamp and reading slit, and to use a reading stand. A signature guide helped him to sign cheques.

He was taught how to use eccentric viewing (see page 8), which helped him to recognise people more easily. This helped him socially.

The professor was advised about the importance of explaining to his friends and family why he was not able to make direct eye contact.

He was also directed to the local government office to obtain a disability certificate and other paperwork.

- Can you walk around in familiar places without assistance?

### Activities

- Can you choose and find the clothes you want to wear?
- Can you add the correct spices and herbs to the food while cooking?
- Can you still do your hobby, e.g., needlework or woodcarving?
- Can you read religious texts, the newspaper, or utility bills?

### Participation

- Do you attend family functions?
- Do you attend religious or other events?
- Are you still able to vote?

Check with relatives that this is what they have observed or experienced; sometimes people feel embarrassed to acknowledge how dependent they have become.

It is also important to find out what kind of support they have at home.

- Who do they live with, and is this person able to provide help some of the time, or all of the time?
- Is providing this support having a negative effect on the family in any way?
- What is the home like? Are there steps? Where are the washing and sanitation facilities? How is cooking done?

Having established broadly what support they have at home, and what they can and cannot do in relation to mobility, activities, and participation, find out what

they want to be able to do. This will guide the interventions you suggest.

Ask for specific examples of what would help them to regain independence or self esteem. For example:

- Regaining the ability to read their personal correspondence
- Helping to cook again instead of just sitting around
- Learning to identify the correct medication and taking it independently
- Making a visit to a neighbour on their own, whenever they feel like it.

When discussing these topics, think about the following:

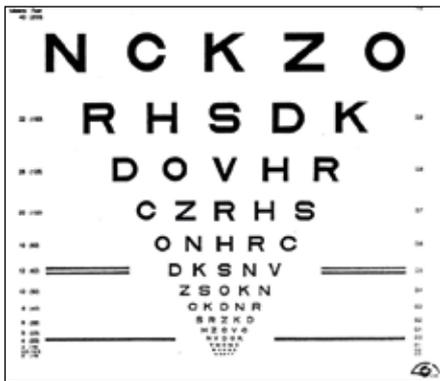
- Do they need help with near and intermediate vision, with distance vision, or with all distances?
- Is the task long (reading) or short (looking at the oven temperature dial)?
- Do they need to have one or both hands free?
- What other visual functions might be affected and must be assessed?

## Accurate refraction

The importance of good refraction in a low vision assessment cannot be overstated.

Refracting people with low vision differs from refracting people whose vision can be improved to normal (6/6 or 20/20), as the person with low vision is

*Continues overleaf* ➤



**Figure 2. A logMAR chart has an equal number of letters in every line, regular spacing between lines and letters, and a uniform progression in letter size**

less sensitive to small changes in the power of trial lenses and may respond much more slowly. Patience is essential, and using the bracketing technique (see panel) can help.

Fatigue and frustration can negatively influence the outcome of the refraction. Ensure the person is seated comfortably and give them time to recover from any signs of stress or tiredness.

While doing refraction, the test chart should be at a distance where the patient can see at least the top line of letters. Full aperture trial lenses should be used to allow the patient to move their head or eyes in order to fixate eccentrically (see panel on page 8).

Assess the near addition (lens) needed and measure the working distance with which the patient is comfortable. Record their best corrected near and distance visual acuity.

**CASE STUDY 2**

**A 45 year-old man with glaucoma**, who drove himself to work in a factory, was referred to the low vision clinic. He was married with two school-age children, and was the main breadwinner in the family.

The man said that he had problems with driving and working in the evenings, and had difficulty navigating inside the factory. These difficulties were the result of loss of peripheral field and reduced contrast sensitivity related to the glaucoma. He also had difficulty in crossing roads, identifying curb edges, walking in shaded places, and identifying landmarks. These findings suggested a need for better illumination in the evenings and in situations of poor lighting.

The low vision assessment included distance and near visual acuity with best correction, visual field testing by confrontation, and contrast sensitivity testing using light-coloured objects

**Assessing residual vision**

The support we provide depends on having a thorough understanding of the person’s overall visual function. For example, people with poor contrast sensitivity may require more magnification than suggested by their near visual acuity alone.

When assessing someone with low vision we therefore need to have a better idea of their overall visual function, including:

- Distance visual acuity
- Near visual acuity
- Contrast sensitivity
- Visual fields
- Light sensitivity
- Colour vision

If you work in a setting with limited resources, the improvement of distance and near visual acuity can be emphasised; the other visual functions can be tested functionally, as suggested here.

If you work at a large eye hospital, use the appropriate tests and equipment.

**Distance visual acuity**

We are used to testing distance visual acuity using standard Snellen charts at only two distances: six metres (20 feet) or three metres. However, when testing someone with low vision, we should preferably use logMAR charts as they give better measures of acuity. If the person cannot see the letters at three metres, we must also test at other test distances, such as two metres, one metre, etc.

against a dark background. Mobility was tested in different lighting conditions by going for a short walk with the client. His distance visual acuity was 6/24 (0.60 logMAR) with his myopic glasses of -4.00D. He could read 1M (N8) without his glasses at 20 cm.

A 6D hand-held magnifier was prescribed to make reading the newspaper and small print on the machinery more comfortable, and he was advised to wear a cap with a visor to reduce glare when in bright sunlight. After consultation with his employer, levels of illumination in the factory were increased. This improved contrast, enabling him to navigate doorways and concrete pillars more easily. This improved his mobility, working efficiency and confidence. He was advised to travel to work using public transport or share rides with co-workers. The need for regular review and continued use of glaucoma medication was explained.

**Using the bracketing technique**

Because patients with poor visual acuity may have difficulty in determining small changes in lens power and clarity, it is often necessary to make large power changes.

A bracketing technique can be useful. For example, use a +2.00DS trial lens and compare this with a -2.00DS trial lens. If the patient is able to differentiate between the two, the lens giving the better vision can be added and the technique repeated using, say, a +1.00DS and a -1.00DS lens, etc. It may be necessary to refract the patient with the chart placed at 3 m or less. If this is done, the result is over-plussed (the chart at 3 m acts as a near object and therefore adds a vergence of about -0.30D in the plane of the trial lens) and a correction should be made according to the test distance.

Adapted from: Subjective Refraction: Principles and Techniques for the Correction of Spherical Ametropia, Andrew Franlin [http://www.banjoben.com/low\\_vision\\_refraction.htm](http://www.banjoben.com/low_vision_refraction.htm)

**Near visual acuity**

It is very important to test everyone’s near vision, not just those who can read and write, as good near vision is needed for a very wide range of other activities. We must also know the near visual acuity so that we can prescribe low vision magnifiers for near tasks, if needed.

Near visual acuity can be tested using logMAR charts (Figure 2) similar to those used for testing distance visual acuity. It is important that comparable tests for both are used. The choice of test depends on age, development level, and literacy of the client, e.g., tumbling Es or Landolt rings.

It may be useful to assess near vision at a distance of 25 cm (see article on page 9). Note that people with presbyopia may need an appropriate addition in order to read at this distance. In addition to near vision, reading and writing performance should be assessed among those who are literate. This is because reading requires other functions that are not assessed in acuity testing, for example, locating the next line of print. If near acuity only is measured, difficulties with reading may be missed.

The best way to assess reading is to use printed text from a newspaper or book and to ask the person to read it aloud. Reading aloud allows the assessor to hear mistakes and observe the person’s visual skills.

## Contrast sensitivity

Contrast sensitivity is the measure of the eye's ability to detect differences in greyness and background, or small changes in brightness. Most of our world is in moderate to poor contrast. Visual acuity charts are one of the few things in high contrast!

Reduced contrast sensitivity can be assessed functionally by asking questions such as:

- Do you find it more difficult to walk around in very bright sunlight, or at dawn and dusk?
- Can you see the white light switch on the light-coloured wall in your house?
- Can you read your bills (which are often on grayish paper, with poor contrast)?

There are several ways of testing contrast sensitivity clinically, such as the Pelli Robson chart, but these charts are expensive and require that the person with low vision is literate. A less expensive alternative is the Lea low-contrast flip chart (see page 13 for ordering details), which is suitable for those who are not literate, including children. Low contrast may explain why a person with a visual acuity of 6/36 can manage many tasks well, but struggles in poor light.

### Contrast: tips for daily activities

It is not easy to translate these findings to impact on daily activities. In general, moderate contrast sensitivity might have an impact on reading, whereas very poor contrast sensitivity might indicate the need for visual rehabilitation and mobility training.

You can help people with low contrast sensitivity by advising them how to increase contrast in their environment. There are two main ways:

- 1 Use better lighting.** For example, sit by the window to read or sew, or use a lamp. Be aware: very bright light, including direct sunlight, can reduce contrast.
- 2 Make adaptations in the environment.** For example, use paint or coloured tape to create contrasting strips on steps or around light switches.

### Light sensitivity

Both too little light, and too much light (glare), can affect what someone with low vision is able to see.

People with **increased light sensitivity** struggle to see in the presence of bright light (for example, light reflected by a shiny blackboard or table top). This is a common problem for people with low vision.

In the presence of such bright light, or glare, contrast is reduced and recognising

## CASE STUDY 3

**D** iabetic retinopathy made a 75-year-old woman unsure of her bearings at home, even though she had undergone cataract surgery with intra-ocular lens implantation. She was unable to identify different utensils and other items, such as spices, in the kitchen. She also could not see the knobs on the gas cooker. She was keen to do her own cooking, gardening, reading, and shopping.

Pseudophakia is accompanied by loss of accommodation, while diabetic retinopathy can result in sensitivity to light, patchy field loss, with reduced contrast sensitivity and color discrimination.

These visual functions were all assessed. Her best corrected distance visual acuity was 6/60 (1.0 logMAR) with astigmatic correction.

With a near add of +4.00D, she could read 1.6M at 20 cm.

The interventions recommended focused on improving her near visual acuity and included an 8 dioptre illuminated stand magnifier, which enabled her to read 1M print, using a reading stand to help her read more comfortably. She could also use the magnifier to identify money.

She was trained in the use of eccentric viewing to assist in daily activities and was shown how to fold paper money in different ways so she could tell which amount they were for.

To help in the kitchen she was advised to use different coloured labels for different pots and to use containers of varying shapes or sizes for her spices. She was also advised to remove all unnecessary furniture in the living areas. Other non-optical interventions she liked were a signature guide for banking, and extra illumination for near work.

objects or people can become very difficult.

People with **reduced light sensitivity** also struggle to see, and will often also have reduced contrast sensitivity.

### Light: tips for daily activities

Getting the amount of light right is the key intervention in this situation. Ask what the person is struggling with, such as seeing at night (reduced light sensitivity) or seeing outside in bright sunlight or when the light reflects off the blackboard (increased light sensitivity).

For people with reduced light sensitivity, recommend that they sit near a window or try different lamps.

You can determine the best lighting conditions for particular tasks, such as reading or sewing, by letting the person try out different types of lamps in the clinic.

People with increased light sensitivity could wear tinted glasses, sunglasses, or a cap outdoors to help with glare.

Filters (Figure 3) can help people with both contrast and/or light sensitivity by minimising glare and increasing contrast. Filters look like safety glasses and are available at low cost (see page 13 for ordering details). Many different colours and shades are available, such as yellow, brown, grey, red, etc.

People may need two different shades of a particular filter: one for indoor use (light) and one for outdoor use (dark).

### Visual fields

Ideally, the clinician making the diagnosis will have assessed the patient's visual fields as part of their clinical assessment. If not, questions can help.

Patients may realise that they cannot see detail clearly but can see well enough to walk around. This suggests central visual field loss; this is often due to macular degeneration.

Someone with peripheral field loss from glaucoma or retinitis pigmentosa can see detail but will bump into furniture or fall over things on the floor.

There are a range of tests available, including confrontation (face-to-face) testing, static tests (e.g. Friedmann visual field analyser), and dynamic tests (e.g. tangent screen or Goldmann tests).

Ving Fai Chan



**Figure 3. A red filter has helped this man with achromatopia (a rare form of colour blindness causing extreme light sensitivity) to see in daylight**

Continues overleaf ►

The Amsler grid test is used to plot areas of significant visual loss within the central 20° of the visual field (the area of the retina providing fine detail). The person is tested while wearing their reading glasses or bifocals, if appropriate.

For perimetry, e.g. Humphrey perimetry, a new hand-held perimeter is available from the Low Vision Resource Centre (see page 13). It is quick to use and provides reliable and repeatable results.

### Visual fields: tips for daily activities

For people with central visual field loss:

- 1 Provide high magnification
- 2 Show them how to use eccentric viewing (see panel below).

For peripheral visual field loss, the best advice is to keep pathways clear and to avoid moving furniture in the house. A cane for walking around outside may be very useful.

### Colour vision

It is rare for a person to be completely colour-blind, but reduced colour vision occurs more often in people with low vision. This can be assessed by asking questions such as: do you have difficulty when trying to find clothes of matching or similar colours? Have you noticed any problems when discriminating shades of colours?

There are formal methods for colour vision testing, such as Ishihara plates and the Farnsworth dichotomous test (D-15), which involves colour arrangement. In practice, it is usually sufficient to see

### Eccentric viewing

It is likely that people with loss of central vision (often associated with macular degeneration) will need to develop an eccentric viewing technique, in which they use their peripheral vision instead of their central vision. They might find it easier to see things if they do not look directly at them, but rather to one side or the other.

Eccentric viewing can be difficult to teach, and to learn. However, you could start by encouraging the person to try finding the best area for viewing for themselves, starting with real objects, then faces, and later on with larger letters or words. The person will eventually learn to control their eye movements.

If you have internet access, you can visit <http://www.mdsupport.org/evtraining.html> for a guided introduction in how to use eccentric viewing.

Figure 4. Increasing magnification reduces the field of view (right)



### Low magnification

whether the person can see or match the primary colours, e.g. red, green, and blue. This can be tested using pencils or pieces of coloured fabric, for example, and asking the person what colour they see.

However, clinical colour vision testing can be valuable to make the correct diagnosis concerning the cause of a person's decreased vision.

### Colour: tips for daily activities

People with a colour vision deficiency or with blurred vision may find it difficult to distinguish between two colours that are similar. Suggest the following:

- Arrange the food cupboard so tins or foods of contrasting colours are next to each other
- Ask someone to help label clothes or to put matching outfits together ahead of time (on the same hanger/shelf)
- Use other senses (touch and smell) to find out which fruit are ripe.

### Magnification needed

Many people with low vision can benefit from magnification: using lenses to make objects appear bigger. However, magnification has its limitations. It is important to understand these limitations and explain them to the people you are helping so they have realistic expectations about what is possible.

- Stronger magnifiers have smaller lenses. You cannot have a strong magnifier that has a big lens!
- Stronger magnifiers have more distortion around the edge of the lens, which means you can see clearly through the centre of the lens only.

So, although the object or word looks bigger, only a few letters or a small part of the object can be seen at any one time (see Figure 4). This reduces reading or working speed.

Therefore, we recommend you prescribe the **lowest possible** power of magnifier that can be used comfortably for a long time (if needed).

With electronic devices such as closed-circuit television cameras and

### Moderate magnification

electronic readers, the same limitations do not apply. However, these devices are a lot more expensive than lenses.

**Remember:** to maximise the benefit of magnifiers, it is important that people wear an up-to-date pair of distance correction spectacles when testing magnifiers and that they wear their reading spectacles with stand magnifiers.

For suggestions on predicting the level of near magnification someone will require, see the article opposite.

### Designing a management plan

Develop a management plan based on all the information you have gathered about the person with low vision.

Ask yourself: what does the person need? This depends on their history, their physical capabilities, the nature of their residual vision, and what they want to do. You may suggest some or all of the following:

- Optical low vision devices: for near or distance vision
- Non-optical interventions, such as caps for glare, a reading stand to reduce fatigue, a reading guide, various lamps, filters, sunglasses, etc. See the 'tips' given on pages 7 and 8; the case studies also contain useful ideas.
- Environmental modifications, such as painting lines on stairs or using contrasting colours around the home (see page 12 and the case studies in this article).

Think about when the person should come back to see you again. Make an appointment if possible.

This is also the point during the low vision assessment where you consider what other support the person will need, for example, educational support and/or visual rehabilitation and mobility training.

Write the necessary letters or notes and ensure the person knows where to go.

If possible, follow up with the referral service to check whether your patient has taken up the referral. If not, why not?

*Continues on page 10* ➤

Figure 5. Examples of optical low vision devices (left to right): stand magnifiers, hand-held magnifiers, and spectacle magnifiers



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Hong Kong Society for the Blind

**PRACTICAL ADVICE**

## How to predict the near magnification needed

It is possible to use a simple formula to predict the amount of near magnification a person might need.

The actual amount of magnification needed will vary according to the person's visual needs, environment, and the low vision device chosen. However, this is a useful starting point when selecting low vision devices to try out.

In this article, we use the testing distance of 25 cm, rather than the usual 40 cm, for two reasons:

- 1 Bringing objects closer makes them easier to see and improves contrast, important for people with low vision.
- 2 If we know the magnification needed at 25 cm, it is easy to calculate the dioptres needed to provide this.

### Finding the magnification needed for reading

The formula we use is given below. It lets us predict the amount of magnification the person will need (2x, 6x, etc.).

$$\text{Magnification needed} = \frac{\text{Near acuity achieved at 25cm}}{\text{Required near acuity at 25cm}}$$

#### Step 1. Find the near acuity achieved at 25 cm

- Make sure the person is wearing their distance prescription, if any



David de Wit

Use a reading chart with sentences (or an E chart for people who cannot read). Hold it 25cm from the face. VIETNAM

- Use a reading chart with sentences. Ask them to hold the chart at 25 cm
- If needed, particularly in older people, add positive lenses (from +1DS to +4DS) to both eyes, to enable them to accommodate at 25 cm
- Ask the person to read aloud
- The smallest size the person can read with comfort and good speed gives their near acuity at 25 cm (Note: this is not the smallest size they can see!)
- Write down the **near acuity achieved at 25 cm**, whether in M or N notation.

**Note:** M sizes differ depending on the testing distance used. Table 1 shows the M sizes of different types of text at both 25 cm and 40 cm. The latter is more familiar to most people. For our purposes, it doesn't matter which you use, provided you use the same notation throughout.

#### Step 2. Find the required near acuity at 25 cm

- Ask what they want to be able to read
- Determine the text size and record the **required near acuity at 25 cm**, in the same notation.

**Note:** Don't aim to record the smallest size a person can see. Recording the size the person can read with comfort and speed in **Step 2** ensures that you will be able to choose the right amount of magnification.

#### Step 3. Use the formula to calculate the magnification needed

- Divide the near acuity achieved at 25 cm by the required near acuity at 25 cm. This gives the amount of magnification required.

**For example:** near acuity achieved is 2M, required near acuity is 1M: 2x magnification is needed to achieve this

- Now that we know the magnification needed, we can calculate which dioptre lenses can provide this level of magnification at 25 cm.

#### Dioptres at 25 cm = Magnification x 4

- So to provide 2x magnification at 25 cm (see example above), a device of

- 8 dioptres (D) is needed:  $2 \times 4 = 8D$
- If you do not know the dioptres, check if the box of the device gives the 'x' (e.g., 2x) magnification. This is often given for a reference distance of 25 cm, which is the same distance used in this section.

Table 1. Text sizes in M notation (at both 25 and 40 cm) and in N notation

M (40 cm)	M (25 cm)	N	Usual type text size
2.0	3.2	16	Large print
1.6	2.5	12	Children's books
1.25	2.0	10	Magazine print
1.0	1.6	8	Newspaper print
0.8	1.25	6	Paperback print
0.6	1.0	4	Footnotes

### Magnification for tasks other than reading

Magnification is useful for many other tasks, not just reading. For example, sewing, sorting seeds, and drawing.

For people who cannot read, test their near vision using an E chart and record the size they can **very** easily see at 25 cm (Step 1). It is much easier to see the directions of just five 'E' letters than it is to read sentences, so the tester must resist the temptation to ask the client to read smaller and smaller sizes. Stop early!

Estimate a size of text equivalent to the level of detail they would require for their activity (Step 2). You can now predict the near magnification required (Step 3).

Use the actual activity they want to perform to try out the different magnifying devices, so keep sewing thread and needles, or seeds for sorting, etc., in the clinic; or ask the person to bring their materials. Advise them on different ways of holding their work and the magnifier, and give advice on lighting. If they need two hands free for their activity, spectacle magnifiers are the best device to use.

With thanks to Karin van Dijk, Caroline Clarke, Mark Esbester, and Renee du Toit.

## Selecting a low vision device

Start by thinking about the following:

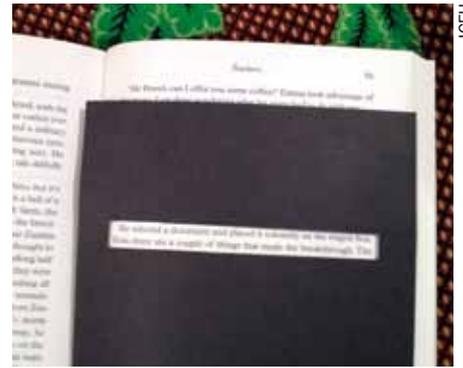
- The person's visual abilities: can both eyes be used? Think about refractive error, ability to accommodate, and age
- The task the person wants to do: can one or both hands be free?
- The time for the task: short (such as checking a medicine label) or long (reading a story)? For a short task, a hand-held magnifier is fine, but for long periods of reading, dome, stand, or spectacle magnifiers would be better
- The physical condition of the person. If

the person's hands tremble, a hand-held magnifier is not useful and a spectacle magnifier would be better.

Other considerations include:

- The availability of the device
- How acceptable it is
- How much it costs
- How much the person has to learn to use the device. Will the person come back if the device is difficult to use?

At the first appointment, try to focus on providing just one low vision device. Choose the easiest problem to solve, or the one that is most urgent for the patient.



**A reading guide or reading slit helps to improve contrast, and it may reduce the amount of magnification needed.**

It takes time to learn how to use a new low vision device; learning one device successfully builds the person's confidence and they will be more likely to come back for further support.

Depending on the task the person wants to do, demonstrate one or more low vision devices that will provide the magnification they need. Allow them time to try the devices for themselves to see which work best.

Where possible, let them do something similar to what they would like to do at home, work, or school. Check the ease with which they are able to use the different devices and suggest modifications as needed. For example: add a reading guide, provide a reading stand, or increase available light.

### Adapting the magnification to fit the person

The magnification you predict a person will need (see page 9) is merely a starting point. Consider increasing the magnification by the smallest step possible for the following factors:

- Poor light: if there is no electricity or the light is dim and cannot be improved
- Tasks done for a longer time, such as reading or studying
- Poor contrast, such as bills or other printed matter with poor contrast
- A longer working distance needed, for example, if the person is physically unable to hold reading materials closer.

Demonstrate one or more devices that will provide the magnification the person needs to do their chosen tasks, and let them choose which one works best.

It is important to listen to the person: what is comfortable for them? What can they physically manage? There is no point in giving someone a magnifier which they don't enjoy using.

*With thanks to Tanuja Britto (ophthalmologist) and Anitha Jayan (rehabilitation professional), Joseph Eye Hospital, Tiruchirappally, India*

### FROM THE FIELD

## How to train people to use low vision devices

**Ving Fai Chan** is an optometrist who works for the International Centre for Eye Care Education (ICEE). He is a lecturer at the

Asmara College of Health Sciences in Eritrea and is the only person providing low vision services in that country.

The first time I tried to drive a car, my dad was sitting beside me, expecting me to do it right the first time. When I struggled, I was extremely disappointed and felt I would never drive again.

It is the same when people with low vision try to use a device for the first time. We, as low vision practitioners, may expect them to know how to use the low vision devices perfectly, without giving them any encouragement or training. We think that, as long as the person has achieved his or her desired vision in the clinic, our job is done. Far from it!

Using low vision devices involves the development of completely new skills, often involving complex hand-eye coordination. And this requires practice. What seems natural and easy to us, such as focusing a telescope, feels quite unnatural to a patient the first time. The only way to solve this problem is to support and encourage our patients continuously.

Here are some basic steps:

- 1 Always explain to patients that it is fine if they are unable to perform the task the first time. Emphasise that this is normal.

- 2 Try to explain that there are things they can and cannot do as a result of their decreased vision, even with the help of the low vision devices. If that is not made clear, patients will have unrealistic expectations and will be disappointed with the results – which means they may give up learning how to use the device.
- 3 Give clear and step-by-step instructions. People with low vision usually respond well to verbal instructions. You can also give written instructions if the person or a family member is literate. Use good contrast and bigger letters where possible.

**'Follow up your patients. Everyone loves to be cared for'**

- 4 Provide regular, routine training. Teach your patients new skills only after they have mastered the previous ones. Giving too much information at once will make your patients feel stressed.
- 5 Follow up your patients. Everyone loves to be cared for. Encourage them and praise them when they have done well. Try to build their confidence and listen to their challenges. Sometimes it is better to listen than to talk.
- 6 Help them to solve their challenges one at a time. Sometimes meeting someone else with low vision can show patients that it is possible to overcome their problems.

Whenever my patients come back with a problem, providing support and encouragement is always the best way I can help them.



# How to work with children and older people

It might take time and creativity to assess a young child, but with patience and appropriate tests distance and near visual acuity can be measured. Other visual functions such as contrast sensitivity can be assessed by asking the child and/or the parents. The following are also important:

- Children are more adaptable than adults and learn fast. They may be able to manage a range of devices for a range of activities, with some being used at school while others are used at home for play.
- Explain to parents it is good to use the remaining vision, even if the child sees less well than other children or only very little. Parents need to understand that spectacles and devices help the child to see better and use their vision better, and that these will not “weaken” their sight or damage their child’s eyes.
- It is useful to find out what beliefs people have about eye conditions in the local community so that eye care workers know what to ask about. For example, people might believe that children with albinism should not be touched, or that the use of spectacles is a sign that vision is deteriorating, or that children who are born with poor vision cannot be helped.
- Many children with low vision have had poor vision since birth and will have developed their own way of learning. They need support to explain to others, especially their peers, why they cannot see everything, what they can and cannot do easily using their vision, and why they might need to use devices such as magnifiers or telescopes. One of the reasons children with low vision do not do well in school is that they fear the negative reactions of peers and/or teachers.

Children with low vision should ideally be re-assessed at least every year. Ensuring they come for follow-up is an important task of the low vision service. This is because:

- The demand on vision increases as they get older (e.g., the size of text in books becomes smaller in higher grades)
- As children grow, they will need bigger spectacle frames; their prescription is also likely to change every year
- Children are more likely to break, scratch, or lose their spectacles.

Give a written summary of all findings and recommendations to the parents and staff at school. In addition, explain the following in clear and simple language:

- The practical implications of the eye disease causing the visual problem: for example, the eyes and the skin of a



**Teaching a young person with low vision how to use a telescope. SOUTH AFRICA**

child with oculocutaneous albinism need protection from the sun as it is very sensitive to light. Clear explanations will help those who care for the child use the interventions recommended

- The meaning of the distance and near visual acuity. For example, say: “Your child can now see 6/24 with the new spectacles. This means she can now read the blackboard from the front row in her classroom”
- Demonstrate to parents and teachers what the child struggled to do before receiving low vision interventions; use real activities such as reading from a school book. Show what they are able to do now that they are sitting near the window (for example) and have received spectacles and/or magnification. This will show parents and teachers the importance of following advice about lighting, wearing spectacles, and using any devices prescribed
- Explain any simple interventions that can help the child to use their vision better, e.g., sitting near the window, using a reading stand, ensuring there are contrasting lines on the stairs
- Explain how and when the child should use the magnifying device(s) prescribed and how to explain to peers how this device is helping them
- Most important: emphasise the need for regular follow-up!

## CASE STUDY 4

**T**his 14-year-old boy came with complaints of struggling to see the small print in his school textbook, which had reduced his reading speed considerably. He said that he was unable to find and pick up anything he dropped or misplaced. He also reported having difficulty in moving in unfamiliar areas and was not able to play with his friends in school. He had difficulty in identifying food and eating neatly.

After a complete low vision assessment, he was given distance

## Working with older people

With older people, one should remember that most of them will have had good vision for most of their life and will have lived independently.

As people get older, it is harder to change habits and to learn new things. Patience and encouragement are very important. We must also be alert to the fact that older people are likely to have other impairments or conditions which can impact on the assessment as well as what is advised and the frequency of follow-up. The following may be present:

- Orthopaedic problems, such as an inability to bend fingers due to arthritis. This may make it difficult to use a hand-held magnifier
- Neurological problems, such as weakness of one arm, or tremors. These may also make hand-held magnifiers difficult to use
- Loss of hearing means that the individual will feel very isolated, and that the assessment, explanations, and counselling may take longer
- Neurological problems, such as dementia, may cause people to forget that they have a magnifier, or how to use it
- Mental health problems such as anxiety or depression are common in older people and may be made worse by a loss of vision. Such people may be too pre-occupied to explain what their problems are, or to concentrate and listen to what is being said to them.

Older people may have to take a range of medications. Ask about this when assessing them. Try to find ways to help them label bottles to ensure they take their medication as prescribed.

If transport is not an obstacle, do the assessment, prescribing, advice, and counselling in several separate visits. Suggest that they are accompanied by a younger relative or a carer.

vision spectacles. A 14D stand magnifier along with a table lamp and reading stand helped him to read and do near work. He was also advised to use a torch at night and a cap to control glare during the day, and to use a dark-coloured lunch box to improve contrast.

At a follow-up visit, he reported that the magnifier was comfortable for reading and that he could now read faster. Simple environmental modifications (the cap, lunch box, extra light, etc.) had improved his independence.



# Making life easier for people with low vision



**Clare Gilbert**

Co-director, International Centre for Eye Health, London School of Hygiene and Tropical Medicine, Keppel Street, London WC1E 7HT, UK; Clinical Advisor, Sightsavers.

There are many things you can suggest that will help people with low vision make the most of their vision, whether they are able to benefit from magnification devices or not.

If you are working at the community or at primary level, remember that these environmental modifications should never be a substitute for referral: always refer someone with low vision for an eye examination, refraction and low vision services wherever possible. If you are working at district/secondary or tertiary level, refer your patient for vision rehabilitation.

The suggestions given here are a good starting point, but some people may require further support and training in order to make the most of their vision.

A way of remembering environmental modifications is to think about:

- Making things **bigger** and **bolder**
- Using **colour** and **contrast**
- Improving **lighting**, using **lines**, and trying to **lift** what you want to look at.

## Bigger and bolder

Bringing things closer to our eyes makes them appear **bigger**. This mainly helps young people and children who have very good accommodation.

People (including children) who have had cataract surgery and those with presbyopia will need a near add (a plus lens) to bring things into focus if they bring them nearer.

Use charcoal or a felt pen to write **bolder** messages, and write with larger letters than usual (Figure 1). Keep it short and simple! Put it somewhere visible and write on a bright piece of paper if you want to attract the person's attention.

Enlarging photocopiers and computer screens are also ways that print and other images can be made bigger and hence easier for the person with low vision to see.

## Colour and contrast

**Colour** can be used in many ways to help someone in their home. For example:

- Use brightly coloured plates (Figure 2)
- Put red tape around light switches
- Use paint or red nail varnish to put spots of red to help the person line up the "off" buttons on the gas cooker
- Stand the person's shoes on a brightly coloured mat to distinguish them from

**Figure 2. Using contrasting colours to improve visibility**



Clare Gilbert/CEH

With normal vision, the rice is visible against all backgrounds. With low vision (right), the rice is much easier to see on the green banana leaf and red plate

**Figure 3. The effect of contrast on the legibility of text**

Once upon a time there was a man who lived at the top of a long, steep track

Poor contrast

Once upon a time there was a man who lived at the top of a long, steep track

Good contrast

Once upon a time there was a man who lived at the top of a long, steep track

Best contrast

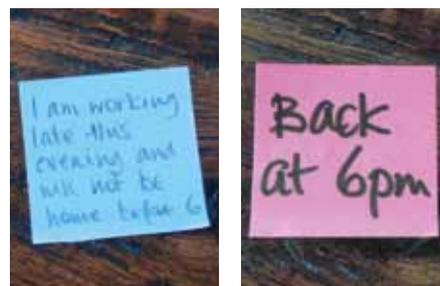
- other family members' shoes
- Mark the bottle of medication that is to be taken in the morning with a big yellow circle (to represent sunrise) and the evening bottle with a big black circle (to represent night).

**Contrast** makes things easier to see. For example, a black pen on white paper is easier to read than pencil. White writing on a black background gives the greatest contrast and hence is easier to read, but this can usually only be generated on a computer screen (Figure 3).

## Lighting, lines, and lift

**Lighting** is perhaps the best way to improve contrast, so if someone wants to read make sure the page is well lit. Ideally, the light should shine directly onto the page, but without producing glare. It should not shine in their eyes. Good lighting in darker areas of the home is important, particularly where the person may be nervous, e.g., going up and down stairs or going to an outside latrine.

**Figure 1. Bigger and bolder (right)**



Clare Gilbert/CEH

Small writing (left) is not as easy to read as big, bold writing. Shorter is better.

At meal times, people with low vision can sit near the window or doorway so they can see what they are eating and when they have finished.

**Lines.** Many people with low vision find it hard to follow a row of text: they may not be able to scan the words easily, they may find it hard to know when they have got to the end of a row of text, or they may struggle to find the beginning of the next line. Partly blanking out the lines above and below the line being read, for example, using a reading slit (see page 10), makes the visible line of print easier to read. A reading slit can be made of black card with a rectangle cut out of it.

Lines can help with mobility and safety. For example, paint the edge of stairs in a contrasting colour, or put white paint on the top of stones which mark the path to a neighbour's home.

**Lift.** Figure 4 shows a locally made, foldable reading stand, lifts the page closer to the eyes and makes reading less tiring, particularly if magnifiers are used.

**Figure 4. Reading stand with angled lamp**



Clare Gilbert/CEH

## How to make an eye clinic more accessible for people with low vision



### Jaya Srivastava

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### Good patient flow

- The unit should be laid out in such a way that it is easy for patients to go from one part of the unit to another
- Some hospitals paint coloured lines on the floor which patients can follow. For example, a brightly coloured line may lead straight from registration to the first waiting area
- Remove obstacles that people with low vision may fall over or collide with.

### Use of colour, contrast, and lighting

- Use large, clear letters for all the signs in the department. Ensure there is good overall illumination and avoid creating glare, which could be caused by using shiny white tiles on the floor and walls. For signs, use colours with high contrast, e.g., white or yellow

lettering on a black or dark background  
Before you make any changes, make sure people with low vision can read the signs!

- In the waiting area, use brightly coloured chairs, or paint them in a contrasting colour compared to the walls and floor. This will help people with low vision to find them and see the ones that are empty
- Use tape or paint to apply a thick line to the edges of steps to make them more visible. Use ramps with a handrail instead of stairs, if possible
- White hand basins and toilets against white tiles can make bathrooms very difficult to use. Change the colour of the walls and/or floor to improve contrast
- If there are lifts, put a brightly coloured arrow or ring around the call button, or



Figure 1

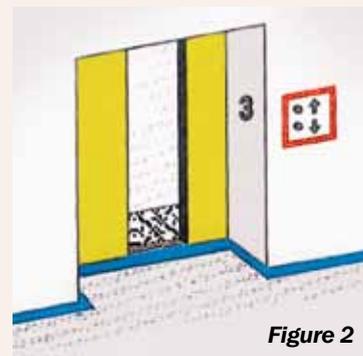


Figure 2

paint the door a different colour (Figure 2).

### Staff assisting someone with low vision

- Be patient: people with low vision may have visited many eye units or professionals already, and have told their stories many times before
- Be kind: people may initially be angry when they are told they have untreatable visual loss. Listen and be supportive, but do not give false hope.

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## Useful resources for low vision

### Low vision devices

#### Hong Kong Society for the Blind

For visual assessment charts, refraction equipment, training materials, and low vision devices. Visit [www.hksb.org.hk](http://www.hksb.org.hk)

#### ICEE Global Resource Centre

For low-cost spectacles, frames, lenses, and low vision devices. Prices for low vision aids start from US \$2.50. Contact Vivasan Pillay at [vivasan@iceeafrica.co.za](mailto:vivasan@iceeafrica.co.za) or +27 312023811.

### Internet browsing support



**LowBrowse™** is a free add-on to the Mozilla Firefox web browser, which is also free. It lets users read all text in web

pages in a special reading frame at the top of the screen. The frame presents text in a single line and users can change the size, font, colour contrast, and letter spacing without having to zoom in and out. It has a speech option which reads the text.

LowBrowse: <https://addons.mozilla.org/en-US/firefox/addon/lowbrowse/> (123.5 kB)

Mozilla Firefox: [www.mozilla.org](http://www.mozilla.org) (32 MB)

### Community Eye Health Journal back issues

These back issues are available online ([www.cehjournal.org](http://www.cehjournal.org) – click on ‘Past issues’) and on the Community Eye Health Update CD which was sent out with Issue 76: Instruments and Consumables. Please let us know if you have not yet received a copy. New subscribers: an updated CD will be sent to you in 2013.

Vol. 20 No. 62, 2007. **The visually impaired child**

Vol. 17 No. 49, 2004. **Low vision care: the need to maximise visual potential**  
Vol. 16 No. 45, 2003. **Helping the blind and visually impaired**

For information on testing near vision: **Rénée du Toit. How to prescribe spectacles for presbyopia.** *Community Eye Health J* 2006;19(57): 12-13.

### Online resources for low vision

<http://bit.ly/L2Y5VS> – article on assistive technology by someone with low vision. PDF (1.6MB)

[www.lowvisiononline.unimelb.edu.au](http://www.lowvisiononline.unimelb.edu.au) – a guided learning resource for eye care workers who want to learn more about working with patients with low vision. Available in English, Chinese, and French.

[www.lighthouse.org/for-professionals/practice-management](http://www.lighthouse.org/for-professionals/practice-management) – a collection of

articles, mainly aimed at ophthalmologists.

[www.mdfoundation.com.au](http://www.mdfoundation.com.au) – practical guides (PDF format) for patients and their carers, with a focus on macular degeneration. Look in “Fact Sheets & Publications”.

[www.afb.org](http://www.afb.org) – advice on living with vision loss.

[www.svrc.vic.edu.au](http://www.svrc.vic.edu.au) – for people with low vision who are in education.

[http://www.ski.org/Colenbrander/Images/Low\\_Vision\\_Exam.pdf](http://www.ski.org/Colenbrander/Images/Low_Vision_Exam.pdf) – practical guidance on performing a low vision assessment, aimed at trained low vision practitioners.

### Low vision courses

#### Kilimanjaro Centre for Community Ophthalmology, Tanzania

For information, contact Genes Mng'anya, KCCO, Good Samaritan Foundation, PO Box 2254 Moshi, Tanzania. Tel: +255 27 275 3547. Email: [genes@kcco.net](mailto:genes@kcco.net) or visit [www.kcco.net](http://www.kcco.net)

**October 17–26: Training in clinical low vision care.** Basic and advanced clinical low vision care. Aimed at optometrists.  
**October 29–30: Population-based approach to establishing a low vision service**



# Low vision care: who can help?



**Karin van Dijk**

CBM global advisor on low vision; low vision consultant to Light for the World Netherlands and to Kilimanjaro Centre for Community Ophthalmology.  
[kvdijknl@yahoo.com](mailto:kvdijknl@yahoo.com)

We know that, in many low- and middle-income countries, low vision services are limited to tertiary or teaching hospitals, which means that most people are not able to access them.

If this is the case, who can those with low vision turn to for help?

People with low vision do not fit comfortably within the job descriptions of most health and education professionals.

- They are not blind, so rehabilitation workers may not feel able to help them
- Clinicians (ophthalmologists, ophthalmic nurses, and other mid-level personnel) feel there is nothing more they can do
- Optometrists and refractionists can improve their vision, but cannot help them to see 'normally'
- Special education teachers are usually trained just to work with children who are blind, and may not have the additional training needed to help children use low vision devices and advise them about where to sit and the importance of using their vision.

In fact, the services of all of these people are vital to ensure that the person with low vision can live a full life.



Innocent Emeruwa

**An older child's colour vision is tested during an outreach clinic. NIGERIA**

One of the most important things we can do, whatever our own role, is to be aware of what other services may help the person with low vision and refer them. And we must communicate with the person, the family, and our colleagues in these other services about the care the person needs, in clear and simple language.

## Importance of referral

People with low vision may need clinical care, refraction, and rehabilitation support, and children and others in full-time education will also require educational support. We may be the

first point of contact for the person with low vision, or their last hope for help. Whatever the case, it is our responsibility to find out whether the people who come to us have received clinical and refractive error care. If they have not, it is essential that we refer them. If they have, we must find out what other support they might need and refer them.

But it is not enough to just refer – it is also our responsibility to make contact with our colleagues in local community rehabilitation and educational support services. Refer people as appropriate, and share information with these

## Providing a basic low vision service at district level: what is the minimum we need?

The Low Vision Working Group of VISION 2020 has endorsed a Standard List for low vision services.<sup>1</sup> However, it may not always be possible to purchase all the items on the Standard List.

We have put together a list of the **minimum** equipment and devices you would need to offer a basic low vision service at district level. This list is based on our experience in the field, and we hope it will help you to start providing low vision support where no other service is available.

Keep accurate records of who you see and how they have been helped. Collect quotes from patients saying how they have benefited, and use these and your records to ask for further training, increased funding, and better equipment for your low vision clinic. Always refer people with complex needs for services at a higher level.

### Ophthalmic equipment

- Streak retinoscope
- Direct ophthalmoscope
- An ordinary trial lens set; a full aperture trial set is preferable
- Universal trial frames
- At least one pair of paediatric trial frames
- Pen torch and measuring tape.

### Vision assessment equipment

- Distant LogMAR test charts: at least have tumbling Es
- Near vision tests: at least have tumbling Es
- Reading acuity test. This can be created on computer using N or M sizes.

### Optical low vision devices

- Spectacle magnifiers: locally made high positive add spectacles, from +4D to +12D, in steps of 2D.

- Four hand-held magnifiers (non-illuminated) from 5D to 20D. For example, one of 6D, one of 10D, one of 15D, and one of 20D
- Non-illuminated stand magnifiers from 10D to 25D. For example, one of 12D, one of 16D, one of 24D
- Use a variety of locally available sunglasses in different shades if filters are not available

### Non-optical devices

- Reading/writing stand: locally made
- Reading slit, signature guide, and writing guide: all locally produced.

### Further reading

- 1 Standard list of low vision services. *Comm Eye Health J* 2004; 17(49): 8.
  - 2 Hasan Minto. Establishing low vision services at secondary level. *Comm Eye Health J* 2004;17(49): 5.
- Both available on the Community Eye Health Update CD and online: [www.cehjournal.org/journal.html](http://www.cehjournal.org/journal.html)**

colleagues about any changes in the needs and vision-related abilities of the person with low vision.

## Different levels of low vision care

### Primary/community level

Nurses, ophthalmic nurses, community-based workers, and other mid-level personnel can do the following:

- Be alert and identify people who might have low vision
- Refer them for diagnosis, prognosis, and good refraction
- Refer older children and adults who have useful vision to low vision services at secondary or district level
- Refer young children and adults with complex needs to tertiary level
- After diagnosis, refraction, and referral for low vision care, advise on non-optical interventions and environmental modifications (pages 7,8, and 12) and refer for educational support and community-based rehabilitation if needed.

### Secondary or district level

At secondary or district level, services are aimed mainly at adults and older children

who want to access print or perform tasks that require good near vision. The panel on page 14 lists the minimum equipment you will need to start a low vision service at secondary or district level.

At this level, optometrists and mid-level eye care workers can be trained to give basic low vision services appropriate to their skills and experience.

They should have good communication skills and be able to do the following:

- Test distance and near visual acuity (ideally also in younger children)
- Perform objective and subjective refraction
- Perform minimum essential low vision assessments (page 4 onwards)
- Prescribe essential low to medium magnification devices for near and distance, with training in their use (pages 9–10)
- Advise patients on non-optical interventions and environmental modifications (page 12)
- Refer people to the most appropriate person or organisation for further training, financial help, and education
- Refer young children and those with complex needs to the tertiary level

- Ensure regular follow-up of adults and children who were seen at tertiary level.

### Tertiary level or teaching hospital

Well-trained, dedicated low vision staff can provide the following:

- Complex assessment tests
- Refraction of people with complex problems
- Provision of a wide range of devices, including electronic devices
- Good links to education and rehabilitation services
- Training the use of low vision devices.

### Beyond the clinic

There will be many more people with low vision in the community who need our services.

Think about how you can reach out to tell them about what you offer. Plan outreach clinics, or link with others working in the community.

Visit schools for the blind – perhaps there are children who will be able to use their remaining vision if they receive low vision support.

Low vision work may be challenging, but it is immensely rewarding!

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# Improving access to low vision services



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### Jill E Keffe

Director, World Health Organization Collaborating Centre for Prevention of Blindness at CERA.

Our recent survey<sup>1,2</sup> found that low vision services were often inaccessible to large numbers of people in low- and middle-income countries.

Based on the findings of this research, we suggest three areas for action: human resources, sustainability of services, and advocacy. However, it is important to keep in mind that these strategies must be adapted to suit your situation.

### Human resources

- Integrate low vision into existing ophthalmic and optometric curricula and include it in the practical training of education and rehabilitation workers
- Offer informal low vision workshops and courses for eye care workers who have not received formal training.
- Delegate tasks to less specialised health workers where possible. For instance, instead of the optometrist doing the simple refraction and basic low vision

care, a trained vision technician could do these tasks.

- Build on the skills of existing staff. For example, in areas where there are no ophthalmologists or optometrists, refractionists, ophthalmic nurses, and opticians can be trained to take on additional low vision tasks appropriate to their skills and experience.

### Sustainability

Strengthen community-based rehabilitation and outreach services.

- During outreach, you could explain or show how the home environment can be adapted and make timely referrals to district level care. Through outreach, people can be followed up to ensure they are still able to use their low vision devices, and you can give refresher lessons to those who need it. In addition, children with poor vision can be detected and supported early.
- Outreach services should be carried out on a regular basis, although the frequency may vary, depending on need.
- Integrate low vision services into existing education, rehabilitation, and eye care systems. Establish appropriate and healthy collaborations between the government and the private sector.

- Non-governmental organisations must work together with the private sector and government to support and fund low vision services. However, for this to work in the long term, the government must take the lead and take ownership of programmes and services.

### Advocacy

We recommend two strategies:

- 1 Use strong research evidence on which to formulate policy.
- 2 Encourage NGOs and all stakeholders with an interest in low vision to come together under one umbrella organisation, i.e. a national VISION 2020 or prevention of blindness committee. The group can then deliver the policy message with one clear voice.

Once advocacy and lobbying have started, more detailed planning must be done at the implementation level. For instance, encourage local government and policy makers to include low vision in their district VISION 2020 or eye care plans.

### References

- 1 Chiang PPC, O'Connor, P, Le Mesurier, R.T., Keffe, J.E. A Global Survey of Low Vision Service Provision *Ophthalmol Epidemiol* 2011;18(3):109-121.
- 2 Chiang P, Xie J, Keffe JE. Identifying the Critical Success Factors in the Coverage of Low Vision Services Using the Classification Analysis and Regression Tree Methodology. *Invest Ophthalmol & Vis Sci* 2011;52(5):2790-2795.

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# Low vision services for children in Tanzania



**Elizabeth Kishiki**

Childhood Blindness and Low Vision Co-ordinator, Kilimanjaro Centre for Community Ophthalmology



**Paul Courtright**

Director, Kilimanjaro Centre for Community Ophthalmology, PO Box 2254, Moshi, Tanzania

The Kilimanjaro Centre for Community Ophthalmology (KCCO) has been involved in a five-year pilot project to improve low vision services for children in Tanzania. Low vision services were limited to a few tertiary hospitals and were accessible to only a few children.

Children with low vision were usually enrolled in schools for the blind, most of them without having received an eye examination or refraction. In these schools, many teachers believe that reading “destroys your vision” and that children with low vision should learn to use Braille; they also believe that all visually impaired children “will lose their sight in the long run.”

To address this, better provision of low vision services and better linkages between education and eye care were needed. To improve provision of low vision services, it was decided to integrate low vision into existing district and regional eye care services, and to train the many optometrists already working at regional or district (population about 1 million) level. One of the



Elizabeth Kishiki

## Many children have benefited from the low vision programme. TANZANIA

key factors in the success of the programme was the appointment of a Childhood Blindness and Low Vision Co-ordinator (Elizabeth Kishiki) to co-ordinate, plan, and teach. Each trained optometrist was also given the lead role in his or her region with a strong report-back mechanism.

To improve linkages between education and health services, teachers were trained in the need for regular low vision care and assessment as well as the use of print (rather than Braille), when appropriate. Combining some of the training sessions to include both teachers and optometrists improved co-operation and collaboration. To ensure sustainability, low vision training was included in special education teacher training at the training college in Arusha.

Meetings were held to improve collaboration between government, non-governmental organisations, and private stakeholders in both education and eye care. This national consensus had to be translated into action at the regional/district and local level, mainly through training of education and eye care workers.

Follow-up was crucial. SMS reminders were used to ensure that children had clinical follow-ups on an annual basis. The co-ordinator made regular calls to the optometrists, and they would visit schools to troubleshoot as needed.

The training of district special needs education officers, who are responsible for annual budgeting, has in some districts led them to include low vision assessments, optical devices, spectacles, and non-optical devices in their district budgets.

While at the start of the programme, only 13% of children at annexes had been assessed by an eye care professional before admission, after four years, 82% had been assessed and were provided services. Some challenges remain, particularly because so many people and services have to co-operate to make low vision services work, but the benefits have made it worth doing.

*With thanks to Light for the World Netherlands, Seva Canada, and Light for the World Austria.*

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# An integrated low vision service: Sri Lanka



**Sumrana Yasmin**

Programmes Manager: South East Asia & Eastern Mediterranean, International Centre for Eye Care Education, Pakistan

Unusually for a low- or middle-income country, Sri Lanka provides free health services through government hospitals and other outlets.

Before, services for the estimated 140,000 people with low vision in Sri Lanka were provided by just three low vision clinics at tertiary hospitals; this meant that few people received the help they needed.

When a national eye care plan was developed in 2007, international non-governmental organisations (INGOs) such as Sightsavers and the International Centre for Eye Care Education were able to make a strong case for including low vision. As a result, and thanks to the support of the ministry of health, low vision was part of the national eye care plan from the outset. The necessary

linkages with education, rehabilitation, and social services could also be established.

Implementation started in 2008 and the first priority was to strengthen the three clinics at tertiary level so they could provide visual skills training, orientation and mobility training, and counselling services for people with low vision.

Ten secondary level clinics, with strong referral links to the three tertiary clinics, were then established within existing district hospitals. These are easily accessible to most people, and offer comprehensive low vision assessment, prescription and dispensing of low vision devices, and training in the use of low vision devices. People with complicated needs are referred to the nearest tertiary low vision clinic for further management.

Ophthalmic technologists provide the services in the ten new secondary level clinics. These eye care practitioners were already working in the eye units at district

level, with their salary paid for by government. Their availability, experience, and existing refraction skills made them the ideal group to train for this task.

Significant progress has already been made. By 2010, nearly 8,000 people (10% of which were children) had been helped, five times as many as in the previous three years.

The next step is to extend low vision services through community-based rehabilitation (CBR) services in order to reach under-served areas and groups; this will form part of existing CBR projects.

Programme planning and implementation is driven by the National Focal Person for Low Vision, Dr Saman Senanayake, who works in consultation with the ministry of health and INGOs. The expansion of the programme has been achieved through co-ordinated national planning, advocacy, human resource development, and the availability of affordable and low cost equipment.

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# From our readers

Thank you to all our readers who wrote in to share stories and experiences around low vision.

## QUESTIONS FROM MADAGASCAR

We received several questions by **Lala Jaona landrinirina** and **Verohanitra Raharimamonjy** of the Centre National de Formation en Santé Oculaire Communautaire in Madagascar. The answers are by **Clare Gilbert**, **Karin van Dijk**, and **Sumrana Yasmin**.

### How can we persuade ophthalmologists and parents that it is important to refer children for low vision services?

- During the eye examination, show parents what their child can currently see, and what they are likely to be able to see after refraction and low vision support. For example, reading a poster on the wall or text in a school book
- Include simulation of low vision (for example, looking through a plastic sheet) when training eye care practitioners
- Find children with low vision who are willing to explain the difference that low vision services have made to them. They can speak with parents, ophthalmologists and others who need convincing
- People working in low vision can talk to their colleagues in clinical eye care about the importance of low vision care. Use real examples of children who benefited.

### How can we persuade people with low vision to accept their condition?

- People who have lost much of their sight will go through a process of grieving, consisting of several stages, including denial, anger, bargaining, and depression; acceptance is the final stage. This process takes time and cannot be hurried. Be there, listen, and provide what support you can
- Put the person in contact with someone of similar age who has accepted the situation and has benefited from low vision services.

### How can we convince children to use a low vision device?

- Start with tasks that are fun to do. Play a game with the child, using the device
- Avoid using just an acuity chart! Use real

- tasks the child is interested in, such as looking at a flower or a family photo, and which they would now struggle to do without magnification
- Show the child that they can do the same activities as their peers, such as reading on their own, if they use a device
- Provide good training, both for the child and the family: first in private so the child can practise without fear of teasing; later, in a variety of settings
- Organise a meeting with a child who successfully uses a magnifying device
- Tell the teacher why a child needs to use a certain device and for what tasks
- Help the teacher to create a positive atmosphere in the classroom. It is helpful if classmates can try out the device and see for themselves why it is useful.

### What devices are best suited to children?

Here are some tips. Each child is different!

- Where possible, first make tasks bigger, brighter, and bolder before introducing magnifiers
- Younger children might find it easier to learn to use a dome or stand magnifier first as they do not have to hold the magnifier off the page. Try high-plus spectacles and/or hand magnifiers later
- Older children do not want to be different from their peers, so pocket magnifiers might be liked as one can quickly put them in one's pocket when not in use.

### How can we keep a child's attention during an examination?

- For practical tips, see 'When your eye patient is a child' (Community Eye Health J 2010;23(72): 4-11). Available on CD or [www.cehjournal.org/journal.html](http://www.cehjournal.org/journal.html)

## VIEW FROM NIGERIA

**Enechi Gilbert**, National Secretary of the Low Vision and Rehabilitation Society of Nigeria (LVRSN), wrote to say that there is still a big gap between the need for low vision services and the country's ability to provide them, in large part because of a lack of low vision professionals. He feels all eye care workers should take responsibility for low vision: "Every eye care professional should be able to at least detect and then diagnose, manage, or refer (in accordance to his/her professional abilities and limitations) people with low vision to other established low vision practitioners or low vision centers."

## REFRACTIVE ERROR AND LOW VISION

Two readers reported that many children were referred to low vision services before they had received adequate refractive error services.

**Vicky Hopley, in Madagascar**, looked at the records kept by Madagascar's first low vision clinic during its first year of operation. She found that, of the 65 children seen in 2008, 15 (around 23%) had uncorrected refractive error.

**K Sapkota, in Nepal**, examined the patient records of the low vision clinic in Nepal Eye Hospital over a 16-month period, ending October 2011. Of the 69 children examined, general spectacles improved the visual acuity of 52 children (75%).

### Our consulting editors respond:

Even if someone has low vision, their refractive error must still be corrected. The right pair of spectacles will improve the vision of people with low vision, even if it doesn't bring their vision back to 'normal'. Many people with low vision will not have received good refractive correction before they are seen in the low vision clinic. These findings emphasise the importance of refraction during any low vision assessment.

## LOW-COST PEN-MOUNTED CCTV CAMERA

Using locally available CCTV cameras, used for surveillance in banks or offices, **V Srinivasan** and his team at Aravind Eye Hospital have built a magnification system that can be connected to a normal television. The system costs approximately US \$60 to make and can be adapted to connect to a laptop computer. It is also possible to use a very small CCTV camera mounted on a pen, allowing the user to see the writing magnified on screen. For copies of plans and more information on how to produce such a system, write to Prof V Srinivasan, LAICO, 72, Kuruvikaran Salai, Gandhi Nagar, Madurai 625 020, Tamil Nadu, India. Email: [v.srinivasan@aravind.org](mailto:v.srinivasan@aravind.org)



Aravind Eye Hospital

# Trachoma: the beginning of the end?

**Danny Haddad**

Director: International Trachoma Initiative  
[www.trachoma.org](http://www.trachoma.org)

Blinding trachoma, one of the oldest known infectious eye diseases, may be facing its end. Formerly the world's leading cause of preventable blindness, trachoma has

brought physical suffering and economic devastation to tens of millions of people, mostly women and children in poorer countries. As a result of development and targeted interventions, however, nine countries with trachoma have already reported achieving elimination targets, and more than 80 per cent of the burden of active trachoma is now concentrated in 14 countries.

But this is not enough. We want to ensure that trachoma is eliminated worldwide by 2020, and that the 4.6 million people suffering from trichiasis receive the sight saving surgery they need.

The World Health Organization (WHO)-endorsed SAFE strategy (Surgery, Antibiotics, Facial cleanliness and Environmental improvement) provides the framework whereby trachoma can be eliminated. But success depends on having in place everything we need to carry out all four elements of the strategy.

To help us get there, the International Trachoma Initiative has been working with partners in the International Coalition of Trachoma Control to create the global strategic plan called 2020 INSight. This plan looks at where we are, where we want to go, how we get there, and the cost and impact of eliminating blinding trachoma.

Scaling up public health interventions described in the SAFE strategy, including antibiotic treatment with Zithromax® (donated by Pfizer Inc.) and improved access to water and sanitation, are the most crucial elements of the plan. 2020 INSight also provides direction on what else is needed to reach this ambitious goal: country leadership, international coordination, logistical and planning support, and adequate funding.

All the elements of the plan must be in place by 2015 if we are to eliminate the disease by 2020. Delayed action will be



Examining a child for trachoma

Victoria Francis

costly. There is the human cost of vision loss or blindness that leads to loss of social status, stigmatisation, and exclusion from society. There is also the economic burden of trachoma on the lives of individuals, families, and

communities. Conservative estimates suggest that the annual loss of productivity due to trachoma is between US \$3 billion and US \$6 billion, and that eliminating trachoma in Africa will boost the continent's gross domestic product (GDP) by 20%–30%.

Those of us involved in the fight against trachoma are hopeful. We have made much progress over the past 12 years. If the global community uses this new strategic plan to focus its efforts, attention, and funding, trachoma does not stand a chance.

Trachoma surgeons and community health workers around the world have a role to play. We invite you to contact us to learn more about what you can do. Please visit [www.trachoma.org](http://www.trachoma.org) or read more about 2020 INSight at <http://trachoma.org/global-strategy-2020-INSight>

## Scaling up the SAFE strategy

2020 INSight suggests the following:

**S (surgery)**

There are an estimated 4.6 million people who need surgery in the districts with confirmed trachoma. To clear this backlog would require the global community to scale up from 160,000 to more than 500,000 operations per year. Training trachoma surgeons is just the first step – there are many other challenges, including low productivity.

**A (antibiotics)**

More mass drug administration (MDA) programmes must be rolled out. The main barriers are getting the drugs to the target population. Co-distribution with other drug programmes can help.

**F (facial cleanliness)**

Behavioural change initiatives are needed in all districts, including about 500 new districts, but this remains difficult. Co-ordination with broader campaigns can be part of the solution (e.g., including face washing in national hand washing campaigns).

**E (environmental improvement)**

Access to clean water and latrines must be improved dramatically. There are still difficulties, but the trachoma community can push for more co-ordination and better information sharing with ministries and other partners focused on water and sanitation.



**EYE HEALTH HERO**

## Alemayehu Sisay

The international sight-saving organisation ORBIS has nominated programme manager and ophthalmologist

Alemayehu Sisay as an Eye Health Hero for the International Agency for the Prevention of Blindness (IAPB) 9th General Assembly.

Dr Sisay, who works in southern Ethiopia, is a hands-on programme manager, travelling to rural areas and remote health points to assess projects, make recommendations, and assist with professional development of eye care professionals working to eliminate trachoma.

Driven by passion for the cause and

an overriding sense of duty, Dr Sisay has been known to stop people in the street if he thinks that they have symptoms of trachoma. On his way to meetings or program assessments, it is not unusual for him to examine people and direct them to the nearest source of help.

The goal of ORBIS, Dr Sisay, and international partners, including the International Trachoma Initiative, is to eliminate trachoma globally by 2020 using the WHO-endorsed SAFE strategy.

As an Eye Health Hero, Dr Sisay will be able to attend the IAPB 9th General Assembly in Hyderabad, 17–20 September, where he will be able to meet the world's leading thinkers in prevention of blindness.

For more information, visit [www.9ga.iapb.org](http://www.9ga.iapb.org)



# Picture quiz: non-optical measures to support children with low vision

Throughout this issue of the journal, there are practical suggestions for supporting people with low vision by improving their environment. However, each person and each situation is different. Look at these pictures, read the questions, and try your best to come up with as many ideas as possible. Answers given below.

David de Wit



**1** If there is no telescope, how can you ensure a child with low vision can access the information on the blackboard?

Karin van Dijk



**2** How can you increase legibility and comfort for this student who is writing notes?

David de Wit



**3** How can you ensure the child with low vision can read the textbook?

Karin van Dijk



**4** What advice can you give to improve reading?

David de Wit



**5** Find the child with albinism. Is this the best place for him? Please give advice.

## ANSWERS

- Question 1**
- The teacher can place the child with low vision as close to the blackboard as possible
  - The teacher can ensure good contrast on the blackboard by cleaning it regularly, writing in a larger size, where possible, and organising the text clearly
  - The teacher can say what she writes while she is writing it
  - The child with low vision can copy from her friend's notebook
  - A friend can say the words on the board so the child with low vision can hear and write them down.
- Question 2**
- The child can write with a very dark pencil or black pen (preferred)
  - The child can be encouraged to write in a size that the child himself can easily see, at a better distance. Consider providing a bigger notebook
  - Use a stand for writing – this brings the book closer and is more comfortable.
- Question 3**
- Make sure the child with low vision has her own textbook
  - Put the book on a reading stand.
- Question 4**
- Use a reading stand and lay the text flat on the stand
  - If no reading stand is available, use a clipboard or piece of board to keep the text flat
  - Use the hand magnifier at a distance where the text is as large as possible and still clear. At the moment, the magnifier is too close to text to give enough magnification.
- Question 5**
- Children with albinism should not sit in a place where direct sunlight falls on them
  - Place the child nearest the blackboard.

## News

**See you at the IAPB 9th GA**

The *Community Eye Health Journal* will be at the 9th General Assembly (GA) of the International Agency for the Prevention of Blindness (IAPB) in Hyderabad, from 17–20 September. Come and meet the team, share your thoughts and ideas, and pick up free copies of useful teaching materials such as posters and books.

The Assembly is the premier global event for public health topics related to blindness and visual impairment. The programme, devised by leading experts in eye care, will feature more than 150 distinguished speakers, over 30 courses, keynote lectures and symposia, rapid fire rounds, and much more. For more information and to register, visit [www.9ga.iapb.org](http://www.9ga.iapb.org) or write to [adicapua@iapb.org](mailto:adicapua@iapb.org)

**BCPB****British Council  
for Prevention  
of Blindness****Call for  
applications**

Applications are invited for British Council for Prevention of Blindness (BCPB) fellowships,

worth up to £63,333 per year for 2–3 years for clinicians wanting to undertake a PhD or MD, and research grants, worth up to £60,000 in total and available to clinicians and researchers for 1–3 years. Closing date: 12 October 2012.

Visit [www.bcpb.org/training.html](http://www.bcpb.org/training.html) or contact Diane Bramson, BCPB, 4 Bloomsbury Square, London WC1A 2RP. Email: [info@bcpb.org](mailto:info@bcpb.org)

**Have your say: disability**

In our upcoming issue on disability, we will focus on what happens to the people who leave our care with a visual disability. What can we do to help? How can people with visual disabilities benefit from wider disability services in the community? How can we support people with disabilities to work together for a better future? Send us your **stories and photographs** describing how you or your team have reached out beyond the eye clinic to make a difference, particularly where you have helped people to help themselves. All articles must be **250 words or fewer**.

**Get your own copy**

Would you like to receive your own copy of the *Community Eye Health Journal*? Or have you moved or changed jobs? Send your details to Anita Shah, International Centre for Eye Health, London School of Hygiene and Tropical Medicine, London WC1E 7HT, UK. Email: [admin@cehjournal.org](mailto:admin@cehjournal.org)

**Courses****Community Eye Health Institute,  
University of Cape Town, South Africa**

For information about VISION 2020 certificate courses in 2012, a postgraduate diploma in community eye health (PGDip) in 2013, or a Masters in Public Health (Community Eye Health) in 2013, contact Zanele Magwa, Community Eye Health Institute, University of Cape Town, Private Bag 3, Rondebosch 7700, South Africa. Tel: +27 21 404 7735. Email: [ntombizanele.magwa@uct.ac.za](mailto:ntombizanele.magwa@uct.ac.za)

**International Centre for Eye Health  
MSc in Public Health for Eye Care.**

From September 2013 to September 2014 or part-time over two years. Apply

before April 2013. For scholarships and details of application, write to: Registry, LSTHM, Keppel Street, London WC1E 7HT, UK. Tel: +44 207 299 4646 or visit [www.lshtm.ac.uk/prospectus/masters/mscphcec.html](http://www.lshtm.ac.uk/prospectus/masters/mscphcec.html)

**Kilimanjaro Centre for Community  
Ophthalmology (KCCO), Tanzania**

For information on courses, contact Genes Mng'anya, KCCO, Good Samaritan Foundation, PO Box 2254 Moshi, Tanzania. Tel: +255 27 275 3547. Email: [genes@kcco.net](mailto:genes@kcco.net) or visit [www.kcco.net](http://www.kcco.net)

**Lions SightFirst Eye Hospital,  
Nairobi, Kenya****Small incision cataract surgery for  
ophthalmologists wishing to upgrade  
from ECCE.** Duration: 1 month.

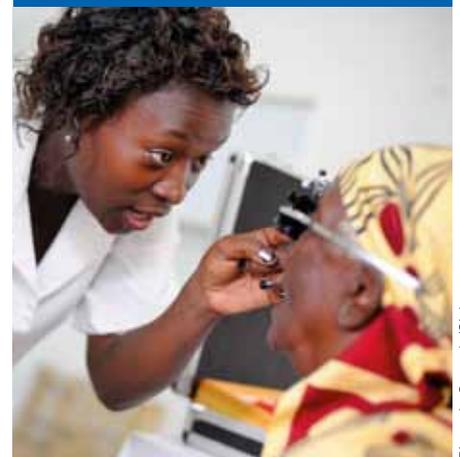
Courses run every month. Cost: US \$1,000 for tuition and US \$500–700 for accommodation and meals. Write to: The Training Coordinator, Lions Medical Training Centre, Lions SightFirst Eye Hospital, PO Box 66576-00800, Nairobi, Kenya, call +254 20 418 32 39, or email [training@lionsloresho.org](mailto:training@lionsloresho.org)

**Lions Aravind Institute of  
Community Ophthalmology**

Instrument maintenance courses with a trainee:trainer ratio of 1:1. Courses start on 1 Feb, 1 Apr, 1 Jun, 1 Aug, 1 Oct and 1 Dec 2012. Duration: Four weeks. Cost: US \$400 (including tools). Visit [www.aravind.org/education/coursedetails.asp](http://www.aravind.org/education/coursedetails.asp) or write to: Prof V Srinivasan, LAICO, 72, Kuruvikaran Salai, Gandhi Nagar, Madurai 625 020, Tamil Nadu, India. Email: [v.srinivasan@aravind.org](mailto:v.srinivasan@aravind.org)

**Community Eye Health****JOURNAL**

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Foundation**Next issue**

Riccardo Gangale/Sightsavers

The next issue of the *Community Eye Health Journal* will be on **running an efficient eye service**