



# USING FUNCTIONAL AND RESIDUAL VISION TO ACHIEVE INDEPENDENT LIVING

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## INTRODUCTION

This chapter includes a review of:

- What is visual functioning
- How to enhance visual functioning
- What is residual vision
- Key to independent living
- Classification of activities of daily living
- Basic steps towards independent living
- Ways to achieve independence

## WHAT IS VISUAL FUNCTIONING?

Visual functioning is the use of vision for particular functions. Functional visual skills are very important and are needed to execute everyday activities. The dissimilarity in how people use vision is usually not related to the measures of distance or near visual acuity. A person may have very poor vision, not good enough for detailed tasks such as stitching, weaving, carving or reading, but may be able to see and keep away from objects so that he/she can move around safely. Functional vision may be improved with training. Many people can learn to make better use of their low vision and can function efficiently with only a small amount of visual information. Objects and print can be recognized when they are blurry or when only parts of them can be seen.

Visual functioning plays a very significant role in promoting independent living in low vision people. If a low vision person, whether they have mild, moderate, severe or profound low vision, is given proper training of their visual skills, he/she will certainly show an improved performance in their everyday activities and move closer to an independent life.

**WHAT IS VISUAL FUNCTIONING? (CONT.)**

<b>VISUAL SKILLS USED TO ENHANCE VISUAL FUNCTIONING</b>	<ul style="list-style-type: none"> <li>• Fixation</li> <li>• Tracking</li> <li>• Scanning</li> <li>• Discrimination of objects</li> <li>• Discrimination of details of the objects</li> <li>• Discrimination of details in pictures</li> <li>• Identification and perception of patterns, numbers and words</li> </ul>
<b>FIXATION</b> (awareness and attention to objects)	It refers to finding an object or target and staring at it continuously, or as long as it takes to be familiar with it or recognize it.
<b>TRACKING</b> (control of eye movements)	It refers to following moving objects with eyes and head.
<b>SCANNING</b> (control of eye movements)	It refers to the accurate movement of eyes from one object to another.
<b>DISCRIMINATION OF OBJECTS</b>	It refers to the correct recognition of different objects from an outline or general shape.
<b>DISCRIMINATION OF DETAILS OF OBJECTS</b> (to identify actions and matching objects)	It refers to the identification of features of the objects.
<b>DISCRIMINATION OF DETAILS IN PICTURES</b>	It refers to getting knowledge from pictures. Pictures can be simple outlines or difficult detailed pictures. The basic features in the pictures have to be identified to understand the theme of the picture.
<b>IDENTIFICATION AND PERCEPTION OF PATTERNS, NUMBERS AND WORDS</b>	<p>It refers to matching letters or numbers by their similar or dissimilar features.</p> <p>It doesn't require reading but it is a very important skill for reading.</p> <p>A person with low vision may not be able to progress through all the steps without special training. Some skills may not be achieved (for example tracking moving objects) but the person can still progress on to later steps.</p> <p>.</p>
<b>EXERCISES OF VISUAL SKILLS FOR THE ENHANCEMENT OF VISUAL FUNCTIONING</b>	<ul style="list-style-type: none"> <li>• Fixation exercises</li> <li>• Tracking exercises</li> <li>• Scanning exercises</li> <li>• Spotting exercises</li> <li>• Eccentric-viewing exercises</li> </ul>

## WHAT IS RESIDUAL VISION?

People must be acquainted with how to make best use of their residual vision – useful sight. Guidance, counselling, rehabilitation, training to perform different tasks, and environmental modification i.e. change in size, distance, colour, illumination and contrast of things being used in daily living activities, can have a very helpful and encouraging effect on the performance of a low vision person in everyday life. Low vision devices can also be useful.

In order to encourage the use of residual vision, the information needed about each person with low vision is his/her:

- Visual acuity (near and distance)
- Visual field
- Colour vision
- Day vision
- Night vision
- Contrast sensitivity
- Illumination preferred
- How the person is able to use vision for particular purposes

Secondly, the features that affect how well a person can see and recognize objects are:

- Familiarity
- Distance
- Size
- Details or simplicity
- Light
- Contrast
- Colour
- Mobility
- Complication
- Position
- Time given

## KEY TO INDEPENDENT LIVING

Until recently, people with low vision have been considered as 'blind'. The behaviour of their community towards them was either protective or neglectful. This attitude of society was very unfavourable and discouraging. A person with low vision is not blind. Blindness means total absence of sight i.e. no perception of light (NPL), whereas, in low vision the client has some residual vision that can be used.

A low vision person should neither be over neglected nor be over protected. The attitude of the community (family, relatives, friends, teachers etc.) should be very balanced.

Low vision people are those who can lead an independent life to a great extent, provided that they know how to make best use of their residual vision in carrying out various everyday activities.



## CLASSIFICATION OF ACTIVITIES OF DAILY LIVING

According to their individual needs, different people have different activities to perform in everyday life; therefore we have classified everyday activities in categories, as follows:

- Routine activities
- Educational activities
- Domestic activities
- Recreational activities
- Self and health care activities
- Outdoor activities
- Social Activities

<b>ROUTINE ACTIVITIES</b>	<ul style="list-style-type: none"><li>• Orientation and mobility</li><li>• Dining</li><li>• Recognizing faces/objects</li><li>• Searching anything</li><li>• Measuring anything</li><li>• Watching time</li><li>• Dialling phone</li></ul>
<b>EDUCATIONAL ACTIVITIES</b>	<ul style="list-style-type: none"><li>• Reading</li><li>• Writing</li><li>• Matching</li><li>• Drawing</li><li>• Working off black board</li><li>• Moving in classroom and school</li><li>• Interaction with class fellows, friends and teachers</li></ul>
<b>DOMESTIC ACTIVITIES</b>	<ul style="list-style-type: none"><li>• Clean and dusting</li><li>• Washing (clothes and utensils)</li><li>• Cooking and baking</li><li>• Peeling and cutting vegetables and fruit</li><li>• Ironing clothes</li><li>• Stitching and knitting</li></ul>
<b>RECREATIONAL ACTIVITIES</b>	<ul style="list-style-type: none"><li>• Indoors games</li><li>• Outdoor games</li><li>• Watching TV</li><li>• Reading (books, magazines, novels, digests, newspapers etc.)</li></ul>
<b>SELF AND HEALTH CARE ACTIVITIES</b>	<ul style="list-style-type: none"><li>• Dressing</li><li>• Combing</li><li>• Make up</li><li>• Measuring temperature</li><li>• Measuring insulin units</li></ul>
<b>OUTDOOR ACTIVITIES</b>	<ul style="list-style-type: none"><li>• Shopping</li><li>• Using landmarks</li><li>• Travelling</li><li>• Attending functions</li></ul>



## CLASSIFICATION OF ACTIVITIES OF DAILY LIVING (CONT.)

<b>SOCIAL ACTIVITIES</b>	<ul style="list-style-type: none"><li>• Social interaction</li><li>• Visiting any relatives/friends</li><li>• Entertaining guests</li><li>• Serving</li><li>• Participating in any indoor/outdoor activities</li></ul>
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## BASIC STEPS TOWARDS INDEPENDENT LIVING

In order to prevent and overcome some of the difficulties faced by low vision people while performing various types of everyday activities, some basic factors should be considered and implemented. To promote independent living in low vision people, these factors are discussed below.

<p><b>SELF AWARENESS</b> (knowledge and feelings about vision)</p>	<p>It refers to person's feelings about his/her vision i.e. whether he/she considers him/herself as;</p> <ul style="list-style-type: none"> <li>• Being blind</li> <li>• Having some, but not normal vision</li> <li>• Having normal vision</li> </ul> <p><b>Suggestions:</b></p> <ul style="list-style-type: none"> <li>• The person should be correctly explained the difference between normal vision, low vision and blindness</li> <li>• The person and his/her family should be made aware of the results of the visual assessment</li> <li>• The person should be told whether his/her poor vision is usable with respect to everyday activities</li> <li>• He/she should be explained the implications of restricted visual fields, the effects of poor contrast or a problem with colour vision, if necessary</li> <li>• He/she should be given suggestions to enhance his/her visual functioning. For example: <ul style="list-style-type: none"> <li>○ Working in the best light</li> <li>○ Moving closer to objects to see them better</li> <li>○ Using objects with good contrast</li> <li>○ Allowing plenty of time for fixation</li> </ul> </li> </ul>
<p><b>SELF CONFIDENCE</b> (use of vision for obtaining information)</p>	<p>It refers to whether vision is used to find out about the environment and what activities are taking place, or if the person waits to be told.</p> <p><b>Suggestions:</b></p> <ul style="list-style-type: none"> <li>• The person should be encouraged to use his/her vision to be aware of what is happening and to find people or objects</li> <li>• His/her attention should be attracted and directed to watch activities</li> <li>• The person should be encouraged to look for the object and reach out for it, rather than being given the object in his/her hand</li> <li>• The person should be taught how the use of contrast and knowing the position of objects can help him/her to move safely in and around the environment</li> <li>• The person should be encouraged to make effective use of other senses when combined with vision. For example, listening for what is happening to find where to look, or using touch to feel a whole object, then looking at the parts</li> </ul>
<p><b>ENVIRONMENTAL AWARENESS</b></p>	<p>It refers to whether the vision has been used to explore and learn about the common objects used by people in the community, by observing behaviours and asking questions.</p> <p><b>Suggestions:</b></p> <ul style="list-style-type: none"> <li>• The person should ask sighted people to explain and describe objects and things taking place</li> <li>• The person should be encouraged to look closely at the objects in the environment. The objects should be described while the person is watching them. For objects that are too far away, too big or dangerous that cannot be looked at closely, they should be described in words that the person can understand from what he/she has seen before and already understands</li> <li>• The person should be shown where things are kept at home, in the school, in the place of worship and in shops</li> </ul>

## BASIC STEPS TOWARDS INDEPENDENT LIVING (CONT.)

<b>INDEPENDENCE</b>	<p>It refers to how the person can use vision to carry out some or all the activities that other people perform without special help, and how hearing and touch is used to help.</p> <p><b>Suggestions:</b></p> <ul style="list-style-type: none"> <li>• The person should be encouraged to take part in all family and community activities and it should be made sure that the person will be safe and will be helped by others only when necessary</li> <li>• Ask peer group to describe what he/she is doing or going to do. For example, he/she should tell a low vision person when he/she enters or leaves the room as the low vision person may not be aware of any other person nearby or in a room</li> <li>• A known person should conduct a demonstration of activities and jobs to be performed by the low vision person. It should be described what to do and how.</li> </ul>
<b>LIGHTING</b>	<p>It refers to either natural or artificial light both inside a building and outside. The amount and direction of light are essential for best visual functioning. The amount of light cannot always be changed. A person can move to different positions to adjust the amount of light from direct sunlight to shade, or from a shady to bright position.</p> <p><b>Suggestions:</b></p> <ul style="list-style-type: none"> <li>• Some low vision people face problems with too much light - they are better in shaded areas. If they need to be in the sun, they should shade the eyes with the hands, umbrella or wear a hat.</li> <li>• Some people face problem with little light. If a person has to work inside, it is better for him/her to sit near a window or a door to use the light, but he/she should not face the window</li> <li>• People with certain eye conditions are almost blind at night or in dull light. They may not have sufficient vision to move safely and independently or do their normal activities that they could do during the daytime. They may need extra help to move safely at night - they could use a torch or flashlight.</li> <li>• As direction of light has an effect on a low vision person's performance, it is better to have light coming from behind and to one side, rather than facing the light. The person should have light shining on the work being done.</li> </ul>
<b>CONTRAST</b>	<p>It refers to the fact that if there is a good contrast between the object and background, the object will be easier to see. For example, light coloured accessories on a dark coloured table are easier to see than dark coloured accessories on a dark coloured table. Poor contrast leads to poor performance. Examples of poor contrast are animals that are same or similar colour as their environment, like a grasshopper.</p> <p><b>Suggestions:</b></p> <ul style="list-style-type: none"> <li>• The person should always use dark objects against light background or vice versa</li> </ul>
<b>COLOR VISION</b>	<p>It refers to the correct use or knowledge of colour being important in some situations, for example, selecting and matching colours. Certain colours are used to decorate objects and people.</p> <p><b>Suggestions:</b></p> <ul style="list-style-type: none"> <li>• Colours should be named accurately. If this is not the case, the person should still be able to work with coloured objects by picking out different and matching similar colours</li> <li>• The person should know the colours of the objects in order to find it without any difficulty. For example, knowing the colour of a person's clothing can help in identifying a person.</li> </ul>



## WAYS TO ACHIEVE INDEPENDENCE

The following are some suggestions of different techniques to help achieve independence:

<p><b>ROUTINE ACTIVITIES</b></p>	<ul style="list-style-type: none"> <li>• Obtain complete familiarity with the environment i.e. to be acquainted with the setting, how everything is arranged and where every object is placed.</li> <li>• Apply protective techniques (upper and lower body) and trailing technique while moving inside the building.</li> <li>• Use white cane with diagonal technique, and apply hand and feet discrimination techniques during ascending and descending stairs and while moving outdoors</li> <li>• Use telescopes to watch distant objects easily</li> <li>• Use other senses i.e. hearing, smelling and touching as much as possible to understand what is happening in environment.</li> <li>• Use bright and high contrast crockery - Always put dark coloured crockery on light coloured mat or light coloured crockery on dark coloured mat; similarly put light coloured food in dark bowls and dishes, for example, boiled rice in a dark dish</li> <li>• Dip the fingertip in a glass while pouring water in it. When you feel water touching your fingertip, stop pouring as it means the glass is almost full</li> <li>• While pouring tea/coffee, feel the temperature of the outside of a cup with finger. As the level rises towards the mouth of the cup, stop pouring.</li> <li>• Use the sense of smell to recognize a dish</li> <li>• Use a prescribed telescope to recognize faces and objects</li> <li>• Use the sense of hearing to recognize any person by his/her voice, and sense of touch to recognize any object by feeling its parts with hands</li> <li>• Use protective techniques and hand discrimination techniques to find and pick any dropped object from the floor.</li> <li>• Use tactile measuring tape or ruler to measure</li> <li>• Use the telescope/ magnifying glasses to watch time or use enlarged, high contrast or talking wall clocks, timepieces and wristwatches</li> <li>• Use the sense of touch to dial phone. The digit 5 is always tactile in a phone set</li> <li>• Use enlarged and high contrast telephones</li> </ul>
<p><b>EDUCATIONAL ACTIVITIES</b></p>	<ul style="list-style-type: none"> <li>• Sit near the window or in proper light (don't face the light)</li> <li>• Use prescribed magnifiers</li> <li>• Use lamp for proper light, reading stand for comfortable posture and other devices for reading (mentioned in chapter 4)</li> <li>• Use bold line copies, black felt-tipped pens and other devices for writing</li> <li>• Use the prescribed telescope to work off chalkboard</li> <li>• Ask the teacher to repeat verbally what he/she writes on the chalkboard after writing</li> <li>• Use enlarged and dark graph papers</li> <li>• Use pen or marker to draw angles or pictures</li> <li>• Trace over pictures or shapes with a dark pen</li> <li>• Get familiar with the classroom, its setting, arrangement and contents</li> <li>• Get well acquainted with all the ways, areas and portions of the school by taking rounds of the school again and again.</li> <li>• Ask someone to demonstrate to you everything about your classroom and school, properly and completely</li> <li>• Develop pleasant and friendly terms with class-fellows, friends and teachers. Don't feel hesitant to interact with them. Don't feel shy to explain to them about your impairment and the problems you face due to it. In this way they can understand you and feel happy to co-operate with you and help you whenever you need their help</li> </ul>



## WAYS TO ACHIEVE INDEPENDENCE (CONT.)

<p><b>DOMESTIC ACTIVITIES</b></p>	<ul style="list-style-type: none"> <li>• Use the sense of touch in cleaning, sweeping, washing and dusting</li> <li>• Get familiar with each and every object and their permanent places</li> <li>• Find all the stains before washing anything by using magnifying glasses and keep in mind the parts where the stains are, and then wash those parts cautiously.</li> <li>• Always use a lighter to put on the fire</li> <li>• Keep yourself at a distance from the stove or oven when putting on the fire or while cooking</li> <li>• Use white enamelled pans for cooking food, in order to increase the contrast of food being cooked in it</li> <li>• Use pans with black inside to boil the milk. It will also give good contrast</li> <li>• Use whistling kettle to boil the water. Its function is to give sound as the water boils</li> <li>• Use vegetable cutting board; white on one side and black on the other. Cut light coloured vegetables on the black side and dark coloured vegetables on the white side to increase contrast and to make the task easy and visible</li> <li>• Use bright coloured kitchen tools, so they are easy to find and easily visible</li> <li>• Label all the jars containing spices and cereals either with names or with signs, in order to recognize them easily</li> <li>• Also use the sense of smell to recognize spices and other cereals</li> <li>• Paint the handles of pans in contrast colours to make them safe, easy to see and hold</li> <li>• Use needle-threading device to put thread in the needle. It involves sense of touch</li> <li>• Use big size needles</li> <li>• Use bright coloured threads for stitching, knitting and weaving</li> </ul>
<p><b>RECREATIONAL ACTIVITIES</b></p>	<ul style="list-style-type: none"> <li>• Use enlarged and high contrast ludo, chess, carom board, footballs and other devices for recreational activities (mentioned in chapter 4)</li> <li>• Use prescribed monocular telescope to watch TV</li> <li>• Use prescribed magnifiers, reading stand, reading lamp and typoscope to read</li> <li>• Use talking books to listen to the book you want to read</li> <li>• Play video games in which bright colours are applied</li> </ul>
<p><b>SELF AND HEALTH CARE ACTIVITIES</b></p>	<ul style="list-style-type: none"> <li>• Avoid making too many dresses of same type of cloth</li> <li>• Apply different types of laces and buttons on the dresses of exactly same material. The lace applied on one piece of a dress should be applied on other pieces as well so that it will become easy to separate all pieces of a dress from other clothes</li> <li>• To separate socks of same pair from other socks, it would be better to join them with buttons even while washing so that they remain in pair</li> <li>• Avoid buying too many garments of same cloth, material and style</li> <li>• Select some standard shades of lipsticks, nail polishes, blushers and eyeshades which can be applied with any colour dress</li> <li>• Having less dresses, cosmetics and shoes leads to easier selection, separation and recognition</li> <li>• Consider buying lipsticks, nail polishes, blushers, eyeshades and other cosmetics from different companies; this will make it easy to recognize their shades as their outlooks differ from each other</li> </ul>

## WAYS TO ACHIEVE INDEPENDENCE (CONT.)

<b>SELF AND HEALTH CARE ACTIVITIES (CONT.)</b>	<ul style="list-style-type: none"> <li>• For more convenience, label cosmetics with the initials of their colours' name</li> <li>• Use the prescribed near vision glasses to cut nails</li> <li>• Use a magnifying mirror while doing make-up or combing hair</li> <li>• Use talking thermometer or insulin-measuring device to hear the measurement, or use a digital thermometer/ insulin-measuring device and read it with prescribed magnifier</li> </ul>
<b>OUTDOOR ACTIVITIES</b>	<ul style="list-style-type: none"> <li>• Take a sighted guide along with you when you go to shopping so that he/she can assist you to recognize objects, to move to different shops or portions of any plaza, to recognize colours and to select things you want to buy</li> <li>• Select some particular markets and other landmarks and get familiar with their shopkeepers and staff. In this way you can go to those places independently</li> <li>• Learn the routes by going through them again and again</li> <li>• Learn permanent clues on the route to different places</li> <li>• Always keep the prescribed pocket magnifier with you, wherever you go. It will be helpful to read prices of things while shopping, the menu of any hotel or restaurant etc.</li> <li>• Always keep the prescribed telescope with you to read bus numbers, street signs, house numbers, shops' names and boards etc.</li> </ul>
<b>SOCIAL ACTIVITIES</b>	<ul style="list-style-type: none"> <li>• Develop pleasant and friendly relationship with relatives, friends and others</li> <li>• Don't hesitate to interact with people</li> <li>• Develop self-confidence</li> <li>• Tell people about your impairment without hesitation and the problems faced by you so they know what to expect of you &amp; when you need their assistance</li> <li>• Whenever people visit you, get properly introduced to them and take into account where everyone is seated</li> <li>• Serve the drinks or other refreshments very calmly without getting confused</li> <li>• Arrange the food on the table yourself so that you know where everything is placed</li> <li>• Whenever you visit anyone, observe your surroundings carefully or ask someone to demonstrate all the details to you</li> <li>• When you are served dinner or lunch, try to observe what things are placed on the table and their arrangement, or ask someone to explain it to you</li> <li>• Try to accept and successfully cope with this impairment and try to lead an independent life as much as possible</li> </ul>

Although people with low vision cannot be given any medical or surgical treatment to cure their impairment, the problems faced by them can be reduced to a great extent by providing them with: guidance and counselling; rehabilitation services; low vision aids and adaptations and; guidelines and techniques, so they can perform their everyday activities in a better way.

People with low vision should know how to make best-use of their residual vision. They can be encouraged to do so by: enhancing their visual functioning; providing proper low vision devices according to their everyday needs; encouraging environmental modifications (proper light, high contrast and bright colours); developing self-awareness in them; developing self confidence in them and; suggesting ways, solutions and techniques to overcome their problems in daily life. If a person with low vision understands how to make best use of his/her residual vision, he/she can perform everyday activities easily and can lead an independent life to a great extent.

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