

# Helping Low Vision Patients to Read Again

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## Abstract

*Rehabilitation of the low vision patient is both optical and psychological. This paper purposely neglects the optical consideration in order to stress the human management aspect of rehabilitation.*

## Abrégé

*La réhabilitation du patient souffrant de basse vision est à la fois optique et psychologique. Ce travail ignore l'aspect optique pour mettre l'emphasis sur le côté humain et psychologique de la réhabilitation.*

## Purpose:

This article is intended to help the private optometric practitioner in his office. It is also directed specifically to helping low vision patients who suffer from *senile macular degeneration*. In our low vision clinic these people form the vast majority of patients and their most frequent desire is to read again. We have seen about 500 such patients in the last 2½ years.

## Macular Degeneration:

As we all know *senile macular degeneration* has its basis in vascular lesions which cause the dysfunction of cones in the macular area of the retina. One of the results is the presence of *central scotomas*. In low vision patients these scotomas are usually present in both eyes. However they are normally more severe in one eye than the other, and are also located somewhat differently on each retina.

The consequences of these factors are that the patient does not have normal binocular vision. In fact the patient tends to use his "one best eye". However to use the residual vision in his "best" eye most effectively, the patient cannot look

straight ahead. Instead he must turn his eye in such a way as to make use of an eccentric area of his retina. This kind of monocular eye movement control can be extremely difficult. Remember that in all his previous life it was a neurophysiologically ingrained function to look straight ahead, and the whole neurological design was built to encourage just that. The difficulty of finding the best eccentric position and then maintaining it is greatest in the act of reading where such fine motor control is required for any kind of enjoyment. This article is to help the private optometrist do this by sharing our trial and error clinical experience.

## The Low Vision Examination:

We shall not go into the optics of helping these low vision patients to any great extent. What we try to do is to determine some form of high

plus spectacle, single vision or bifocal; or microscopic spectacle; or handheld magnifier; or combination of spectacle and handheld magnifier, that at a given working distance (always much closer than normal) will permit the patient to identify *single digits* of about 1M (20/50 on JS) size on a suitable near point card such as the one shown in figure 1.

If the identification of 1M size is not possible, then we want to know what is the smallest print size that is possible for the patient.

We have found that whatever size this is, it is a good guide to the size of print the patient may *ultimately* be able to read, after sufficient training and practice.

## Training & Experience in Reading:

For the private practitioner the key point is not to expect his low vision patient to be able to read, right away, print of the same size he could identify on the test card. Psychologically this is very hard for the average practitioner, because most of the time we work with normal people and our spectacle or contact lens prescription give immediate results, immediate feedback, both to you the practitioner and to the patient. With macular degeneration patients it is different. You must not allow yourself to become discouraged when your patient cannot read immediately. More importantly you must not allow your *patients* to become discouraged because reading may seem so hard at the time of the examination.

Your patient has a whole set of new skills to learn, chiefly aimed at the control of that eccentric retinal area which is all he has left now.

By and large the patient has not learned these skills prior to your examination. First of all he usually doesn't understand his condition and what he must do to read. You can help a great deal by explaining it

NEAR VISION TEST CARD					
			DISTANCE EQUIVALENT	METRIC PRINT SIZE	
GAME			20/360	6 M	
CRANE			20/200	3.5 M	
TOLD	26	(18 Pt)	20/120	2 M	
LEFT	387		20/100	1.6 M	J 10
DOT	49	(12 Pt)	20/80	1.4 M	
BAKE	28	(9 Pt)	20/60	1 M	J 6
CODE	63		20/50	.8 M	
BOTH	94	(6 Pt)	20/40	.7 M	
NEAR	11	(4 Pt)	20/30	.5 M	J 1
NEAR	11		20/20	.35 M	

18 Point Large Type Grades 1 - 3  
14 Point Average Book Print Grades 4 - 7  
12 Point Magazines, Books Grades 8 - 12  
9 Point Magazines, Paper Back Books, Typing  
7 Point Newspaper

Near vision should be measured with best distance correction, and with reading add if patient is presbyopic.  
In cases of subnormal vision, the distance equivalent is used to calculate the add for reading:

denominator = D of add for 1M print.  
numerator

LOW VISION LENS SERVICE  
New York Association for the Blind  
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Fig. 1. Low Vision Near Point Test Card

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carefully to him. Secondly, until now, he has not had a corrective lens adequate enough to provide even the eccentric retinal area with an image magnified sufficiently for him to "get hold of", visually speaking. Now, following your low vision exam, he has, and he can begin learning.

#### Begin Training With Large Print Materials:

Think of the training job you have, as practitioner, as one of providing retinal information of sufficient size to enable your patient to learn to find and keep the best eccentric retinal position.

As an optometrist an appropriate magnification lens has been provided and the correct working distance determined by you for your patient.

Now you must provide home training exercises. The key to this is to begin with *large print* material and *short* words and phrases. These will provide the strongest retinal feedback to the patient. We ask our patients to practice at home for fifteen minutes a day with materials such as those shown in figures 2 and 3. They are told to begin always with large print, and to read *out loud* so as to involve kinesthetic, muscular aspects in learning. They are told

**SUB NORMAL VISION READING CARD**  
 Arranged by WILLIAM FEINBLOOM, Ph.D.  
 for: DESIGNS FOR VISION, INC.

- 1 **You must read very slowly.**  
**You will see better as you go along. Sight is the same as memory.**
- 2 If you see a word once, you can read it better the next time. Never give up, but try again.
- 3 Many people who have not been able to see for a long time can be helped by efforts to do so. The eye is part of the brain.
- 4 Teach the brain to see and the eye will see. You must hold this card steady. Move this card near you or away from you until the type is clear. Keep the type in focus.
- 5 Each time you practice it will help to make your eye sight stronger. You must get used to these special glasses. After you have used them for a short time you will see better.

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Fig. 2. Practice Materials

## These are instructions for your new reading glasses.

**These glasses are not like any you have received before.**

**They are intended for reading only and may not be used for television, working or other distance activities.**

**You must hold the reading material at the correct distance. These glasses will not work at any other distance. The proper distance is \_\_\_\_\_.**

**Many times it is necessary to block or cover one of the lenses. This is so that you can adapt to your lenses easier. This will not harm your eyes.**

In the beginning you may become tired with your new glasses. You may also get headaches. Be assured that this is only a temporary condition and will soon subside.

Do not move your head when you read. Hold your head still and move the page. This is so that you can find your place easier. Many times a bookmark is helpful. You will not learn to use these lenses overnight. It takes days and even weeks of practice.

Always use a good light. Place it so that it is on the side of the better seeing eye. Remember: Hold the material at the proper distance, keep practicing and good luck.

Fig. 3. Practice Materials

not to worry if they can't read smaller print right away. The whole rationale is thoroughly explained to them.

In fact the reading of even large print is very encouraging to the patient and spurs him on, because up to now even that has not been possible. Now it is a real accomplishment.

We usually ask our patients to return in a month's time to show us "what they can do." During this time they are asked to call a Low Vision Assistant for further guidance, if necessary.

#### Of Clipboards and Lamps:

At close working distances and where the depth of focus of high convex lens systems is limited, reading is much easier if the material is flat. So by all means encourage your patients to put their material on a simple clipboard and hold it close.

Lighting is critical for best retinal functioning, even more so with low

vision patients, even with the best lens system. We usually urge the use of a table model or floor "goose neck" type lamp that can be placed beside and slightly behind the patient's head, about a foot or so from the material. A 60 or 100 watt bulb is usually sufficient and is not too hot at that distance from the patient's body.

#### Conclusion:

We have not compiled statistical results in this area at our clinic. But we hope sharing our clinical experience will help you and your low vision patients. One of ours with 20/300 vision now reads a regular book a month.

#### References

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