

Low vision aids

Support throughout central vision loss

Magnifiers and other devices that can help you
make the best use of your vision

**No one need face macular degeneration alone.
For information and support call 0300 3030 111.**

If you have a reduced level of vision that cannot be improved with glasses or any other treatment, you are said to have 'low vision'.

'Low vision aids' are pieces of equipment that help you make the best use of your vision.

By making good use of the aids as well as lighting and other advice it is possible to continue with most activities.

You may find that things take a little longer to do but, by learning some new tricks and habits, you

can have a good quality of life in spite of having some vision loss.

What are low vision aids?

These include:

- magnifiers (which are optical low vision aids i.e. they incorporate lenses)
- products which use colour or contrast to make them easier to see and use, or are bigger than standard
- large print products.

Items such as reading stands, anti-glare spectacles, and task lights can help you to function

more effectively and comfortably whilst doing visual tasks.

As well as everyday items to make life easier, there are leisure products like large print playing cards, scrabble and dominoes.

Audio or tactile items are not technically counted as low vision aids as these are about vision substitution rather than making the most of residual vision, but it is worth bearing such equipment in mind.

Your local society for the visually impaired

may have a demonstration kitchen or resource centre with a display of useful equipment such as talking watches, large print address books, and task lights.

Larger centres may have high-tech items such as electronic magnifiers, talking scanners, accessible mobile phones or talking microwaves.

If it is not possible to visit a resource centre, suppliers like the RNIB, sell direct to individuals. For a current list of suppliers call our helpline **0300 3030 111**

Many useful items are available in non-specialist high street shops including brightly coloured cups, multi-coloured chopping board packs, big button phones, large clocks and kitchen timers.

Make use of all the services that are available to you including:

- support available through your local Social Services sensory impairment team who will be able to provide information about the support that is available

and offer practical advice around daily living skills such as preparing food and getting out and about safely.

- a low vision assessment – will help you decide whether items like magnifiers will be of benefit to you and train you in ways to use them successfully. You can also be shown ways to use your vision more effectively.

If you are not sure where your nearest low vision service is, ask your local eye department, GP, social

services sensory impairment team, opticians or local society for people with sight loss. Usually one of these will be able to give you the details.

Get comfortable

Magnifiers and other low vision aids are tools, using them can be frustrating but if you are comfortable and you follow a few hints and tips, hopefully you will appreciate them more.

If you can maintain a comfortable, natural upright posture whilst

using magnifiers, CCTVs and other low vision aids you will be able to see and do more.

Use:

- a clipboard. It gives a flat firm surface to make life a bit easier when trying to use a magnifier. You can then bring it and the magnifier nice and close to the eye.



- an adjustable light weight table that can be pulled up to an armchair can raise items to a more comfortable height
- cushions to support your arms holding the magnifier and object.

If you choose to sit at a table for a particular task, it is natural to rest an item on it and lean over to use a magnifier. However this will be uncomfortable after a while for your neck and back. You will also be restricting your breathing – meaning it will be more difficult to keep everything steady and your head will block the light.

A reading stand or even a student's drawing board will enable you to sit upright, whilst sitting at the table.

Using magnifiers will not damage your eyes in any way, although you will get tired if using them for any length of time. Little and often is the best approach.

When we are concentrating, we forget to blink which blurs the vision and the eyes get gritty and uncomfortable. So every few minutes look away from the text or screen blink a few times and then go back to it.

Lighting

Good, well positioned task lighting can make a real difference to the way you use your vision and makes life easier.

People are often pleasantly surprised at just how beneficial lighting can be – from enhancing the contrast of text, making print look blacker on a white background to, in some cases, helping to ‘break through’ the mistiness in their vision.

Lighting can also mean that you can reduce the level of magnification you need to see a particular size of print.

Some magnifiers have lights built into them. For more information see our Lighting leaflet MS013.

Magnifiers – optical low vision aids

Magnifiers increase the image size of an object to make them easier to see. Magnifiers are tools. They will never make it as easy to read as it was before the onset of macular disease, but they can help.

Optical devices provide assistance through the use of some form of optical lens(es);

either a single lens system, such as a hand-held magnifier, or alternatively a multiple lens system, such as a telescopic monocular.

Learning to use magnifiers is easier when the powers required are relatively low, so request a referral to a low vision service as soon as you experience difficulty with tasks like reading that cannot be rectified with the use of ordinary spectacles and/or good lighting.

A low vision assessment will help you to select the most suitable magnifiers and

demonstrate how to use them successfully. There are many different powers and sizes of magnifiers to meet different needs and preferences.

The type of magnifier you need for a task will depend on the level of detail you need to see, the lighting conditions and how long a task takes to complete. You also need to take into consideration weight, portability and your ability to hold and keep a lens steady.

Generally speaking, you will need several magnifiers to do different things.



Illuminated stand magnifier

Magnifiers can be used for near or distant objects.

For example:

- a larger, lower powered, handheld lens is good for reading larger print items, or for looking at photographs.
- a high-powered lens is good for looking at very small print briefly -you might have a pocket version of one of these that is small enough to take out and about.

- for seeing bus numbers and street signs a small telescope could be useful.

“Magnifying power” is usually denoted with an “x” to mean “times”. For example “x5” means it appears to make an object 5 times larger (but only when used in a specific way).

There are two ways of calculating the “magnifying power”, and manufacturers can use either method to label their products. The best way to compare two magnifiers marked with the same power

is to look at the same object, and see which makes the object appear bigger.

Please note:

All magnifiers have certain distortions and aberrations that can never be completely eliminated.

A person may find that one model of magnifier will have reflections and distortions which make that magnifier totally unusable but will find another make and model with almost identical specifications that works well for them.

The stronger a magnifier is:

- the smaller the lens will be – it is not possible to manufacture a large diameter lens of a high magnifying power.
- the shorter the working distance will be, i.e. it will have to be used much closer to the eye.

Avoid - Sheet magnifiers including screens which claim to magnify a television or a computer screen. They are unlikely to be of use to anybody with macular disease.

Hints to using a magnifier:

- To see more at a time, bring the lens close to the eye (not arms length) and then bring the object towards the lens until it is in focus. This will give a wider field of view i.e. more of the word at a time rather than just one or two letters.
- Unless the magnifier is of a low power you will only be able to use it with one eye; where possible use it with the eye that has the best vision (this may not be the same eye that was your better eye before the onset of MD).

- If the image appears upside down when you look through a magnifier the distance between the object and the magnifier is too great – bring the object closer to the eye.
- When using a hand-held or stand magnifier keep any movement slow and even to minimise blurring.
- The centre of the lens gives the clearest, least distorted image. Do not read across the lens as the image will distort towards the edges.

- The best technique when using a magnifier is to get the first word as clear as possible. Once you have located your best viewing position, keep your head, eyes and the magnifier still, and move the object you are looking at.

This is known as Steady Eye Strategy and takes some practice to master, but it helps keep everything in focus and you will lose your place less frequently.

For more information about this technique call the helpline on 0300 3030 111.

Basic Types of Optical Magnifiers

Hand-held magnifiers:

The most familiar style of magnifier. The lens is held away from the object and the design incorporates a handle.

Stand Magnifiers:

Stand magnifiers are designed to rest flat on the page, lens uppermost. This maintains the correct distance between the lens and the text.

Stand magnifiers might be helpful if your hands are a little shaky. Stand magnifiers are made in different shapes and sizes and are

available in strengths from x2 to x20. A few low powered stand magnifiers have a deep enough stand to allow you to get a pen underneath for writing.

When using a stand magnifier, to help keep the text and magnifier steady, use a clipboard or reading stand. You then slide the magnifier across the page in order to read across a line of text.

If you find that the image is clearer when you lift the stand magnifier away from the page, you may

be wearing the wrong spectacles or you may need a stronger stand magnifier.

It is also possible to get a folding hand/stand magnifier. This has an inbuilt stand that can be folded away or manoeuvred into a different set-up to give you the flexibility of two or more designs in one, for use with a wider range of tasks.

Illuminated Stand Magnifiers

Some stand magnifiers have inbuilt illumination. They can be plugged into an electrical socket or fitted with batteries. With the lens

uppermost, the light needs to shine onto the object you are looking at, not into your eyes.

Many models have LED (light emitting diode) illumination. They give a brighter, whiter light and are more energy efficient than filament bulb versions, so batteries last far longer. Also, you do not need to keep replacing the bulbs as with the more traditional filament bulb.

If the bulb does fail on an LED unit, the whole unit will need to be replaced. If this happens, contact your low vision

service or supplier for a replacement.

If you have an illuminated magnifier supplied by a low vision service, they should have shown you how to use the unit and also how to maintain it.

Pocket Magnifiers

These are small enough to take out and about and are useful for shopping. The strength of pocket magnifiers varies from x2 to x15. Some pocket magnifiers are



A stand magnifier. Note the use of a task light shining onto the clipboard.

fitted with lights, whilst others are designed to fold up into a protective case that also acts as a handle.

Brightfield / Flat-form Magnifiers

These are bar or dome magnifiers that look a bit like a paperweight or a shaped ruler.

These magnifiers have light gathering properties focusing the available light on to the page. They are used rather like a stand magnifier, in other words it is placed flat on the page and you then slide the magnifier across the page in

order to read across a line of text.

They are available in magnifying powers up to x3 although it is possible to combine them with other magnifiers. For example, a hand magnifier can be used to look at the enlarged image seen through the flat-field magnifier.

A bar magnifier version only magnifies in one direction, so letters are taller but the width of the text is unchanged. This enables several words to be seen at one time. Some models have a painted



A flat-form magnifier

guideline or typoscope to help you keep your place when reading.

Round-the-neck Magnifiers

These low-powered magnifiers are useful for some hobbies like

knitting or model making, where you need to have your hands free.

They hang from an adjustable cord with the frame designed to rest on your chest in

order to angle the lens away from you.

The maximum magnifying power of these is x2, although some models have a tiny inset lens of a higher power.

If you don't need a higher magnification to read or if the print you are looking at is quite large, they can be used for reading, but you must keep the lens and your eyes still and move the text.

This is known as Steady Eye Strategy – see page 12.

Telescopic devices for looking at distance

These have been especially designed for people with low vision. They are smaller and lighter than ordinary telescopic systems and can be used for short periods. Monoculars are for use with one eye and binoculars are for use with both eyes.

They can be used for distance tasks such as watching television (although better results may be achieved by sitting closer to the television), at the theatre, reading the

score board at a sports match, reading notice boards, road signs, departure boards and bus numbers.

They cannot be used for crossing a road as distances and speeds are impossible to judge through a telescopic system. Telescopic devices must only be used when you are stationary.

Some Low Vision Services may be able to loan you distance units and show you how to use them, free of charge.

Successful use of a monocular telescope takes practice but this simple four step approach can help you develop the skill over time:

Step One – Identify a target before using the monocular. Looking towards the target will help you to find the target quickly when using the monocular.

Bring the monocular up to the eye, place the rubber cap underneath the upper bone of the eye socket – don't push into the eye socket. Initially use a monocular with

two hands. Focus on the target by slowly twisting the far end of monocular (or sliding the switch mechanism) until the target is visible.

Step Two – Practise focusing the monocular on different targets at various distances.

Step Three – To use the monocular to track a moving target, you first need to find a static reference point.

For example, if you need to see if an approaching bus is the right one, you will first need to choose a tree or a traffic signal that

is at about the right height and distance to where the bus will first appear. Get that object in focus so that when the bus appears you are ready.

Step Four – Progress to using the monocular with one hand. Be careful in a crowd that you don't get knocked – supporting your elbow with your other hand may help.

There are a few telescopic devices developed for near vision; the majority need to be spectacle mounted and have to be specially made for you.

Spectacle - mounted aids

Magnifiers in spectacles are not the same as ordinary spectacles. They may enable you to complete a task without having to hold a device but it will involve compromise.

Those designed for near vision, either a high-powered single lens (much thicker and heavier than ordinary spectacle lenses) or multi-lens telescopic systems, have a much shorter working distance than other types of magnifiers and have to be made up

specifically for each individual person.

Only low powered distance telescopic units can be spectacle-mounted. Higher powers are too long and heavy to be successfully mounted on a carrier frame.

Bespoke units made to your prescription and measurements can only be dispensed by an Optometrist or a Dispensing Optician.

If you would like specific technical advice about magnifiers or similar equipment call the helpline 0300 3030 111.

Typoscopes

Typoscopes are simple but useful tools. They are often made of black card or plastic with holes cut in them to act as a guide when reading or writing.

The surround serves to screen out excess information and glare, allowing you to concentrate on the area of particular interest.

Some magnifiers even have a form of typoscope painted onto them, helping to highlight a line of text while you read through the magnifier.

There are many pre-cut typoscopes available, but some people prefer to make their own from black card, cutting the slot to their preferred shape and size and according to the task being performed.

For example, the width of a newspaper column and a couple of inches deep is a good size for reading newspaper articles.

Signature and cheque book guides are a form of typoscope. Signature and envelope address guides are available from the RNIB.



A typoscope

Cheque book guides should be available on request from your bank or building society.

Each organisation has a slightly different layout for their cheque books.

Electronic low vision devices

There are many different types and models of electronic magnifying devices. These incorporate a camera and the image is sent electronically to a viewing screen.

Generally, the level of magnification available will be between x2 and x70 depending on the camera and the size of the screen.

Many have controls which can alter contrast, enhance or reverse colours e.g. the image can be

changed to white text on a black background instead of the original black text on white paper as well as the ability to adjust focus and magnification levels.

Closed Circuit Television (CCTV)

With the larger table-top devices the object or text is placed beneath a camera and the image is projected onto a TV screen or built-in monitor.

These can achieve very high levels of magnification but take up quite a bit of room

and are heavy. Some have a sliding table mechanism to help you move the object or text under the camera.

On others, the camera may be hand-held rather than on a fixed stand and will slide over the text. This can be useful if looking at objects with a slightly curved surface such as a thick book where the text curves towards the spine.

Portable devices have a built in camera and screen and can help you to read with greater flexibility.

However, because of the screen size you see only a small area of text

Some portable devices look a bit like a hand held illuminated stand magnifier with a handle, some are more like a small box with a screen.

Hand-held CCTV readers are generally cheaper and smaller than the stand mounted CCTVs and consist of a hand held device which you move across the text. Some do not have a built-in screen but

plug into your computer or a TV if it has a SCART socket.

Unlike optical magnifiers, electronic devices are not generally available on loan from a low vision service. If you buy an electronic magnifier you may still need an optical device for some tasks.

A lot of people are using the in-built cameras of their smart phone or tablet computer as a magnifier and CCTV reader. Both portable and less costly they offer many advantages.

Researching and choosing your electrical device

They can be expensive so give careful thought to your needs before you buy.

Be prepared to put some effort and research into finding the right electronic device for you.

Electronic devices are very useful but all too often we hear from people who have purchased one and are disappointed once they get it home.

They are useful for things like reading food

packets, letters, looking at photographs and other similar tasks in short bursts but it is unrealistic to expect to be able to read a book for long periods.

You can have two people with very similar levels of vision and one will get on really well with a specific device but the other person finds that the system distorts badly for them.

If you are considering purchasing any electronic magnifying device, have a think about what tasks you want to use it for and try it out before buying.

Less expensive devices may have less functionality and options like colour changes, but might be ideal for you.

Some people invest in a device that costs several thousand pounds and are delighted with it, but in turn it might be absolutely useless for you. Therefore other people's recommendations may only give you a starting point as to what may be helpful to you.

Many local societies for the visually

impaired have a small selection of electronic low vision aids for you to look at. A few are able to offer short term loans so you can try one out before purchasing.

Image quality is constantly improving and these devices are getting more sophisticated, lighter and more versatile all the time.

Low vision exhibitions

To get an idea of the latest available devices you could attend a low vision exhibition where the majority of

manufacturers exhibit their products.

Regional events are generally organised by the local society for visually impaired people. The national events 'Sight Village' are organised by Queen Alexandra College. They are held in Birmingham, London and one or two other locations each year.

Be careful about impulse purchases at exhibitions – ask for contact details and make a decision when you have had time to consider your options.

Once you have decided what type of

electronic aid might work for you arrange for a demonstration of specific models, before making your final decision.

Often the retailers are happy to arrange for a demonstration in your home. When considering suppliers and the various models that they have in their range think about the following:

- Do they offer a trial period on a sale or return basis?
- What service and support options are available?

Further information

Our leaflets **Lighting and Using Technology** and give additional information about making the best use of your remaining vision. Our publications are available in audio CD. Call the helpline for a print or audio copy 0300 3030 111.

You can also download an audio version from our website www.macularsociety.org/leaflets

For a current list of equipment and suppliers please call our helpline.

How we can help

We are the national charity for anyone affected by central vision loss. We provide free information and support to improve lives today. We fund research so that one day we can overcome macular disease.

You don't have to be a Society member to use our services. We provide:

Helpline – confidential advice and information on all aspects of macular disease, including diagnosis, treatment and living with central vision loss.

0300 3030 111
Monday to Friday
9am – 5pm
help@
macularsociety.org

Counselling – It's natural to feel upset or angry when you're told you have a macular condition. Many people find it helps to talk, in confidence, to a professional counsellor.

Support Groups – we have a network of almost 300 local groups

Befriending – Having a macular condition can leave you feeling isolated especially if it's hard to get out and about. Your

dedicated befriender will call regularly for a friendly, social chat about anything you like including, but not always, macular disease.

Advocacy – help accessing treatments

Skills for seeing – training to make best use of remaining sight

Treatment buddy – chat to people who've had treatment by injection for support and advice

Charles Bonnet buddy – chat to others who've experienced visual hallucinations as a result of a macular condition

Join us

Many people join the Macular Society so that they can make a difference.

Your support now will give desperately needed help to people losing their sight.

To join today call

01264 350 551

**info@
macularsociety.org**

and be part of a campaign for better care and fund research to find a cure.

AMD causes more than half of all blindness in Britain. 600,000 people have AMD and another 200 people are diagnosed every day.

We urgently need to find a cure and you can help today. We are the only UK charity dedicated to funding research into macular disease.

To make your vital donation and move us closer to a cure call us today or go online.



Support throughout central vision loss

Macular Society

PO Box 1870, Andover, SP10 9AD

01264 350 551

www.macularsociety.org

info@macularsociety.org



@MacularSociety



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