

# Protecting your eyes

**Support throughout central vision loss**

Bright light is painful for many people with macular conditions. You can protect your eyes from glare and ultraviolet light.

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

## What is glare?

Glare is the discomfort caused by too much light. Everyone will have experienced this at some point; perhaps when sunlight has shone into your eyes unexpectedly or from an oncoming car's headlights.

A number of sight conditions can make glare more of a problem and some people become very sensitive to light.

In younger people with macular disease, changes to the photoreceptors in the eye may cause this.

In age-related macular degeneration there may be other reasons as well, such as the presence of cataracts, which scatter light as it enters the eye, increasing glare.

Whatever the reason, glare is uncomfortable and it is important to try to reduce its effects.

## Coping with glare

Here are some simple tips for reducing glare:

- Wear a hat, cap or sports visor with a broad brim or peak to stop bright sunlight reaching your face and eyes.

- Choose a close-fitting style of sunglasses or wrap-around frames to stop light getting in from above or to the sides.
- Or try styles which have built in side and brow shields. These are worn over the top of ordinary glasses. They are called 'overshields'.

Some people find that bright, white paper can cause glare when they are reading.

- Try using transparent plastic 'overlay' sheets on top of white paper. Your optician or low

vision specialist can help you find the colour of sheet best for you.

- Typoscopes are simple, useful tools. They are made from black card or plastic and have slots cut in them.

Put the typoscope over the document you want to read, using the slots as a guide. The surround screens out excess information and glare allowing you to concentrate on the words you are interested in.

The RNIB sells typoscopes and you

can make your own. Signature and chequebook guides are forms of typoscope.

Computer screens can also be uncomfortable if you suffer from glare.

- Reduce the screen brightness.
- Look for the 'alternative view' settings on a website home page. You should be able to change to a yellow background with black text, a black background with yellow text or a black background with white text.

Make sure lighting in your own home is bright but even.

- Make sure lamp bulbs are covered by shades or positioned so that light does not shine directly into your eyes. There is more on this in our Lighting leaflet (MS013).

## Protection from light

The visible light which we see is part of the 'electromagnetic spectrum'. This is the range of energy which is given off by the sun in wave patterns.

At one end of the spectrum there are radio waves, microwaves and infrared waves. At the other end are ultraviolet waves (UV), X rays and Gamma rays.

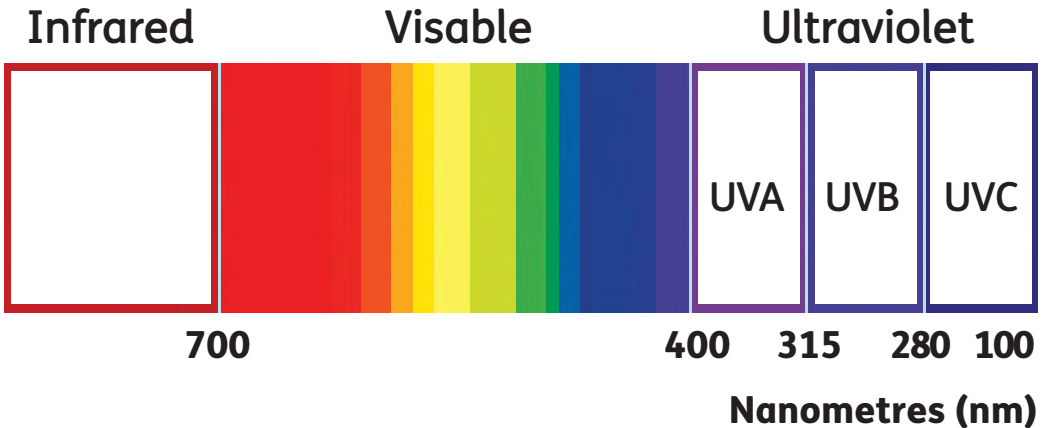
In the middle is the 'visible spectrum' – the familiar rainbow of red,

orange, yellow, green, blue, indigo and violet.

The different wavelengths of the electromagnetic spectrum are measured in nanometres (nm).

Nm = a billionth of a metre.

### Electromagnetic spectrum



## Ultraviolet light

It is not clear what part UV light plays in the development of macular disease specifically, but there is no doubt that, over time, our eyes can be damaged by the effects of UV light. Many people do not realise this even though they are aware of the damage UV light can do to skin.

Some studies suggest that people with low macular pigment may be at higher risk of developing macular disease.

Macular pigment is made up of anti-

oxidants such as Lutein, which are thought to act as a natural sun screen for the macula. There are three types of UV ray, A, B and C.

UVC is generally blocked by the earth's atmosphere. However 90% of UVA and UVB reaches us. Both can damage the structure and the tissues of the eye. UVA in particular penetrates further to reach the retina.

The usual way to protect our eyes from sunlight in general and UV light in particular is to wear sunglasses.

There are some important things to remember when choosing sunglasses.

### UV filters

- Cheaper sunglasses may have a dark tint but offer little protection from UV. To be effective, the glasses need a UV filter.
- A dark tint on its own will cause the pupil of the eye to widen, actually letting in more UV.
- Look for a European CE mark or British Standard BSEN 1836:2005 to make

sure the lenses are of good quality.

- UV filters can be clear. They can be used in ordinary prescription glasses as well as sunglasses and even contact lenses.
- Most UV filters block wavelengths up to 400 nm which includes UVA and UVB.
- Reflections from sand, snow and water magnify the effects of UV light.

### Blue light

The blue part of the visible spectrum can also cause damage

to our eyes. Blue light is scattered by dust particles and moisture in the air. The most damaging blue light wavelength is around 440 nm.

Blue light is responsible for the haze on a bright, sunny day and it increases dazzle, glare and blur for some people with macular conditions.

## **Blue blocking lenses**

The problem with traditional sunglasses, even good ones with UV filters, is that they make things darker.

Many people with macular disease find this reduces their level of vision, making it harder to see steps or other hazards.

Blue-blocker lenses reduce glare without making everything darker.

Blue light tends to make images hazier, so blue blockers sharpen images and improve contrast.

Blue-blockers are usually yellow or orange although other tints can be added to improve the appearance of the lenses.



Some people prefer to have more than one pair; paler, yellow lenses are good for indoor use because they work well in artificial light, dark lenses may be better outside.

Blue blocking lenses can be ordered from mail order companies, low vision services, sensory impairment teams and resource centres for visually impaired people.

You can also have your ordinary prescription glasses made up with blue blocking filters. There are no British or

European standards for blue blocking lenses so buy from a reputable company or ask for advice from your optometrist or optician.

Some companies will provide details of which wavelengths of the spectrum are blocked by their lenses so that you can check their effectiveness.

**For details of suppliers, please call our helpline:**

**0300 3030 111**

**email: [help@macularsociety.org](mailto:help@macularsociety.org)**

## Warning

Never use a tinted lens for driving at night. If you are dazzled by headlights get anti-reflection coated lenses to reduce headlight glare.

Although it is important to protect your eyes from both blue and ultra-violet (UV) light to prevent further damage to your eyes; you cannot reverse any damage that has already been done.

Damage will have been accumulated over your lifetime, and around 80% of that occurs before the

age of 18 so, **think of the next generation:**

- From an early age get children used to wearing hats and sunglasses to protect their eyes.
- Comfortable good quality sunglasses are available for babies and children.
- Encourage regular eye examinations throughout their lives.

## **Macular Society services**

**Helpline:** Our helpline team is there for anyone affected by macular conditions.

**Call 0300 3030 111**  
Mon-Fri 9-5

**help@**  
**macularsociety.org**

The helpline can give advice and information about all aspects of macular disease including diagnosis, treatment and living with central vision loss.

**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.

**Treatment buddy:** About to have injections for your macular disease? Find out what to expect. Our helpline can put you in touch with people who've already had the treatment for an informal, friendly chat.

If you've found this leaflet useful please consider making a donation to support our work.

**Macular Society**

**Support throughout central vision loss**

**Macular Society**

**PO Box 1870**

**Andover**

**SP10 9AD**

**01264 350 551**

**[www.macularsociety.org](http://www.macularsociety.org)**

**[info@macularsociety.org](mailto:info@macularsociety.org)**

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