Migraine and light sensitivity
Migraine is a condition which is estimated to affect one in seven people in the UK and which can cause many symptoms, including a throbbing one-sided headache, nausea and vomiting and visual disturbances.

For many migraineurs (32 – 40%) light sensitivity is closely linked to their condition. \[1\]. Bright light may contribute to triggering an attack itself, with common potential hazards including sunlight, fluorescent tubes, computer and TV screens (especially LCD or plasma), car headlights, as well as reflected glare (off water or whitewashed walls, for example).

A sensitivity to light is also a disturbing symptom experienced by many during a migraine, with people often needing to retreat to a darkened room for the duration of the attack.

The link between light and headache was better understood through the work of Dr Andy Dowson, Director of Headache Services at King’s College Hospital, London, and Alan Maine (European Institute of Health and Medical Sciences) who found that migraineurs are specifically sensitive to the red and blue parts of the spectrum, rather than the green middle part of the spectrum.\[2\]. (Red light is prominent in strip lighting and blue-tinged highlights are fitted to some cars).

Knowing that neither photochromic or regular tinted lenses offered protection, Migraine Action supported research undertaken by Dr Dowson and MediView to investigate the impact on frequency and severity of attacks when using a spectacle lens designed to filter red and blue light – the MigraLens®.

The research found that 90% of volunteers experienced a reduction in headache intensity and 60% experienced a reduction in frequency and duration of headache. Their effectiveness in sunlight and other sources of bright light was rated as ‘very good’ or ‘excellent’ by up to 90% of people, with 91% preferring MigraLens over other tinted glasses previously used.

Further research conducted by the Dyslexia Research Trust found that people who are dyslexic and complain of migraine type headaches reported that blue filters often relieved their symptoms. \[3\].
Research continues to look at the issue of light sensitivity and migraine. In early 2010 new research was published by Harvard scientists suggesting that a new visual pathway had been uncovered which underlies a migraineur’s sensitivity to light. The research found that migraine patients who were totally blind (unable to see images or to sense light) did not experience any worsening of their headaches from light exposure, but in migraineurs who were classified as legally blind but could detect the presence of light, pain intensified when they were exposed to light. As a result, researchers suggest that the mechanism of photophobia must involve the optical nerve, because in totally blind individuals the optic nerve does not carry light signals to the brain. This research provides scientists with a new avenue to explore and Dr Dowson believes the identification of this pathway may lead to new targets for treatment of migraine in the future.

In the meantime, MigraLens® offers an effective migraine management option for many light sensitive migraineurs to aid visual discomfort during and between attacks.

The lenses absorb the red and blue light from sunlight, artificial lighting, television, computer screens etc. and are available made to your prescription if required. There is a wide range of frame styles, or as ‘clip-ons’ to fit over existing glasses. Some have fixed or detachable side shields for extra protection.

Please note: MigraLens® aren’t suitable for driving.

Alternatively, some migraineurs may need a more personalised approach; [www.s4clp.org](http://www.s4clp.org) is a website that shows all the specialist optometrists that can create personalised coloured lenses to suit your own individual needs.
Common triggers for light sensitive migraineurs and tips for managing them

**Flicker and glare**
Flickering lights can trigger a migraine attack for some individuals. There are ways of reducing the effect through small changes at home and at work:

- Ensure that lighting is adequate and well positioned.
- Fluorescent lighting should be properly maintained to minimise flicker.
- Fluorescent lights should be fitted with the correct type of diffuser to imitate natural daylight as much as possible.
- Avoid reflected glare from shiny / polished surfaces, plain white walls etc., opt for matt finishes and break up surfaces with pictures, posters or plants.
- Fit adjustable blinds to windows.

**Dazzle**
Some individuals report that their migraine can be instantly triggered by bright colours or patterns: stripes or zig-zags, chequered designs, especially on floors (black and white tiled floors seem to be the main culprit). Try to opt for plain, neutral colours where possible to help minimise the risk of more frequent attacks.
VDUs
The increasing use of computers has been found to cause problems for many migraineurs – e.g. time off work or a need to change career. Here are some useful hints and tips:

- Adjust and maintain computer screens to eliminate flicker or glare (e.g. static rather than pulsating cursors).
- Consider a computer with a flat screen.
- Position computer screens to avoid reflection from windows.
- Get a good adjustable chair and find ergonomic designs for your workstation, paying special attention to seating position and posture.
- Ensure your VDU is on a rock steady surface.
- Set brightness down to the minimum legible level.
- Take regular breaks from the computer.

If using a VDU at work, have a look at the Health and Safety Executive Guidance notes for VDUs and discuss with your boss. For further information on Health and Safety, visit www.hse.gov.uk or contact the HSE helpline on 0845 345 0055.

Migraines could be triggered by eye strain and many employers offer free eye tests for their staff if working with computers forms a significant part of their job. Speak to your HR department about your workplace policy.

You can also contact Migraine Action for a copy of our ‘Managing migraine in the workplace pack’ for more information on working with your employer to help prevent and manage your attacks whilst at work.
Light bulbs and light sensitivity
The news that traditional light bulbs are being phased out has generated a great deal of concern amongst light sensitive migraineurs.

Migraine Action has been voicing the concerns of migraineurs since the news of an impending ban of the traditional light bulb and that the use of energy saving light bulbs was to be made compulsory by 2011. Our concern was not voiced because we are environmentally unfriendly, but was instead based on evidence from migraineurs that the new bulbs caused them to have migraine attacks. We noted too that no real trials had been done into the health implications of these bulbs. Because of this lack of formal data many government agencies dismissed our concerns describing them as anecdotal!

Why is there a problem?
The new energy saving bulbs are in reality Compact Fluorescent Light bulbs (CFLs), a type of fluorescent lamp specially designed to replace an incandescent (traditional) lamp. Fluorescent bulbs have a tendency to flicker because they radiate a different light spectrum. While this flickering may not be noticeable to the naked eye, to some sufferers of migraine it is a well documented problem and can be a trigger for an attack. But environmentally, CFLs do use less energy which means they have become a popular option for use in carbon reduction initiatives. As an example, in the United States, CFLs have been shown to save 2000 times their own weight in greenhouse gases.
What does the Health Protection Agency (HPA) recommend?
The advice from the HPA is not specifically targeted at migraineurs. It broadly states that out of the types of CFL bulb available, the encapsulated variety - which looks more like the traditional light bulb - is preferred over the single envelope variety (the light bulbs which look like prongs or coils). The advice is based on new research by the Agency itself which has shown that some energy saving compact fluorescent lights may emit ultraviolet radiation at levels that, under certain conditions of use, can result in exposures higher than guideline levels. The HPA’s view is that single envelope CFLs should not be used where people are in close proximity - closer than 30 cm or 1 ft - to the bare light bulb for over one hour a day. The new advice is that in such situations these CFLs should be replaced by the encapsulated type. Alternatively, the light should be moved so that it is at least 30 cm or 1 ft away.

Migraine Action is working in partnership with lighting manufacturer Megaman UK Ltd to conduct a low energy light bulb trial. The trial is home based and volunteers will use a range of bulbs over a period of three months. Data will be collected looking at symptoms and attack frequency versus lamp type, output and colour temperature. We hope the results will highlight if there are particular types of low energy bulbs which are more ‘migraine friendly’.

Migraine Action has also joined forces with Spectrum, an independent UK light lobbying group, whose members face difficulties as a result of the traditional light bulb ban. For the latest updates please visit www.migraine.org.uk/news.
For further information, advice on migraine management and for updates on the latest migraine research, please contact Migraine Action by calling 0116 275 8317, emailing info@migraine.org.uk, or visiting the charity’s website at www.migraine.org.uk. All of our information resources and more is only made possible through donations and by people becoming members of Migraine Action. Visit www.migraine.org.uk/donate to support one of our projects or visit www.migraine.org.uk/join to become a member.

For more information about MigraLens®, call MediView on 020 8933 7914, email info@mediviewspecs.co.uk or visit www.mediviewspecs.co.uk.

References

1. Headache Classification Committee of the International Headache Society, 1988, Classification and diagnostic criteria for headache disorders, cranial neuralgias and facial pain, Cephalalgia, 8, supplement 7, S19-S28.

