Photosensitive epilepsy

www.epilepsy.org.uk
Epilepsy Helpline: 0808 800 5050
Epilepsy Action aims to improve the quality of life and promote the interests of people living with epilepsy.

Our work...

• We provide information to anyone with an interest in epilepsy.
• We improve the understanding of epilepsy in schools and raise educational standards.
• We work to give people with epilepsy a fair chance of finding and keeping a job.
• We raise standards of care through contact with doctors, nurses, social workers, government and other organisations.
• We promote equality of access to quality care.

Epilepsy Action has local branches in most parts of the UK. Each branch offers support to local people and raises money to help ensure our work can continue.

Join us...
You can help us in our vital work by becoming a member. All members receive our magazine *Epilepsy Today*, free cover under our unique personal accident insurance scheme and access to our services and conferences.
Introduction

Photosensitive epilepsy is the name given to epilepsy in which all, or almost all, seizures are provoked by flashing or flickering light, or some shapes or patterns. Both natural and artificial light may trigger seizures. Various types of seizure may be triggered by flickering light.

Many people think that everybody with epilepsy is photosensitive, but in fact only five in every hundred people with epilepsy are. Photosensitive epilepsy usually begins before the age of 20 years, although it is most common between the ages of seven and 19. Photosensitivity tends to affect girls more than boys. There is also evidence that photosensitive epilepsy can be passed on through the genes.

Diagnosing photosensitive epilepsy

One investigation that is carried out to diagnose epilepsy is an electroencephalogram, or EEG. The EEG records brainwave patterns from the continuous tiny electrical signals coming from the brain. During one
part of the EEG, you are asked to look at flashing lights, to see if this triggers epileptic activity in the brain. If it does, then this may indicate that you have photosensitive epilepsy.

Hertz

The word hertz (Hz) refers to how often something happens in a given time. In photosensitive epilepsy, hertz (Hz) refers to the number of flashes or flickers a second. When talking about televisions or computer screens, hertz refers to the rate the scanning lines ‘refresh’ themselves.

Most people with photosensitive epilepsy are sensitive to 16-25 Hz, although some people may be sensitive to rates as low as 3 Hz and as high as 60 Hz.

Television

Watching television is a common trigger for photosensitive seizures. The nearer you are to the screen the more likely it is to trigger a seizure. This is because a larger area of your eye’s retina is stimulated by the flicker of the picture, increasing the risk of a seizure. If you sit close to the screen you can see the 25 Hz flicker of the lines as well as the 50 Hz mains flicker on the screen as a whole. It is common for people with photosensitive epilepsy to be sensitive to 25 Hz, so it makes sense to sit well back from the television to reduce the risk of seizures.

The pictures shown on the screen can also make seizures more likely to occur. For example, if there is a particular combination of colour and flicker, or where there are many press photographers using flash photography all at the same time.

New types of television

100 Hz televisions

100 Hz televisions are unlikely to trigger seizures in people with photosensitive epilepsy.
Plasma or liquid crystal display (LCD) televisions

Plasma and LCD screens do not use the scanning lines of other televisions and are therefore less likely to trigger seizures. However, plasma screens tend to be brighter, with high contrast. This could make seizures more likely for some people with photosensitive epilepsy. If you are choosing between these types of screens, and you have photosensitive epilepsy, the current advice is to buy an LCD.

Precautions when watching television

• Watch the television in a well-lit room.
• Have a small, lit lamp on top of, or close to the television.
• Don’t sit too close to the television. Watch from a distance of at least 2.5 metres (8 feet).
• Use the remote control wherever possible – from a safe distance - to adjust the television or to change channels.
• If you have to go near the television, cover one of your eyes with the palm of your hand. This will cut down the number of brain cells that are stimulated by any flicker on the screen.
Computer monitors

Many people think that people with photosensitive epilepsy are not able to use computers, because they will trigger a seizure. Although some images being displayed on the screen could be a problem, using a computer in itself is extremely unlikely to trigger a seizure.

Types of monitors

Cathode ray tube (CRT)
These are the traditional, large monitors. CRTs have scan frequencies of 70 Hz and above. As most people with photosensitive epilepsy are sensitive to 16-25 Hz, CRTs, provided they are not faulty, are unlikely to trigger seizures.

Liquid crystal display (LCD) – also known as thin film transistor (TFT)
These thin, flat, screens are flicker free. This means they are unlikely to trigger seizures.

Risk from material displayed on computer monitors
If the material contains flashing, flickering or repetitive patterns, it will carry the same risk, whether it is viewed on a CRT monitor or an LCD monitor. Images displayed on LCDs are sharper and brighter than on CRTs. Some people are sensitive to patterns with a high contrast. Where these appear on an LCD screen, the brightness and sharpness of the screen may increase the risk to people with photosensitive epilepsy.

Anti-glare screens
Anti-glare screens can be of help in reducing glare. However, they do not reduce the flicker rate and are therefore of no specific benefit to people with photosensitive epilepsy.
Interactive whiteboards

Interactive whiteboards do not flicker, so are not likely to trigger seizures. However, there could be a risk to people with photosensitive epilepsy if the images shown on the whiteboard contain high contrast patterns or flashing or flickering at the frequencies known to trigger seizures.

Video games

Although some video games may be quite safe to play, others could present some risk if you have photosensitive epilepsy. There are things you can do to minimise the risk of video games triggering seizures.

• If you are using a television rather than a computer monitor, follow the precautions for watching television (see page 5), as well as those below.
• Before playing, check to see if there are any warnings that come with the game. Most games manufacturers, but not all, follow the Office of Communications (Ofcom) television guidelines. Some put a warning on the packaging while others put it on the instructions inside.
• Avoid playing when tired as tiredness/lack of sleep may increase the risk of a seizure.
• Take frequent breaks for rest and food between playing games.
• Play video games in well-lit areas.
• Sit as far back from the monitor as possible.
• If possible, use an LCD/TFT monitor, but remember to reduce the brightness of the screen to reduce the contrast.
• For most people, covering one eye while playing will reduce the effect of any flickering on the screen. You should cover your eye, not simply close it.
• If your child has photosensitive epilepsy, you may wish to keep a close eye on them when they are playing video games. If they show any signs of distress or discomfort such as dizziness, blurred vision, loss of awareness or muscle twitching, you should immediately stop them playing the video game.
Patterns

Some non-moving patterns with high contrast may trigger seizures in some people with photosensitive epilepsy. Examples of high contrast patterns are black and white stripes, some patterned materials and wallpapers, and sunlight through slatted blinds.

Strobe lighting

Although the flash rate of strobe lights is restricted to four flashes a second by the Health and Safety Executive, some people with photosensitive epilepsy may still find strobe lights could trigger a seizure. You may therefore wish to avoid night clubs or discos with strobe lights and other places where you could come across strobe lights (for example some theme park attractions). If strobe lighting, or other flashing or flickering lights come on without warning, you should immediately cover one eye with the palm of your hand and turn away from the light.
Fluorescent lighting

Although some people find fluorescent lighting uncomfortable, the flicker rate (100 Hz) means it should not be a problem for most people. The flicker of a faulty fluorescent light, however, could trigger a seizure in people with photosensitive epilepsy.

Sunlight

Sunlight in itself is unlikely to trigger seizures. However, sunlight reflected off wet surfaces, seen through leaves of trees, or when walking quickly past railings where the sun is shining through, could trigger seizures in people with photosensitive epilepsy.

Polarised sunglasses

Polarised lenses work by removing reflected horizontal light. Wearing polarised sunglasses out of doors on sunny days, therefore, can help to minimise the risk of seizures occurring, although it will not remove it entirely. Your optician or retailer should be able to tell you which of the sunglasses they stock have polarised lenses.

Ceiling fans

Light seen through a fast-rotating ceiling fan could trigger seizures in some people with photosensitive epilepsy. Therefore, one with a slow rotating motion is advisable.

Flashing bicycle lights

There have been cases where red flashing lights (red light emitting diodes) on the back of bicycles have triggered seizures in people with photosensitive epilepsy, when they have been close to the lights as they were setting them up. If you have photosensitive epilepsy you may wish to avoid being close to these types of lights.
Flash Christmas tree lights

These lights should comply with health and safety regulations before going on sale. The lights should not, therefore, flicker at a rate which could trigger seizures in the vast majority of people with photosensitive epilepsy.

Sun beds

These should not trigger seizures, unless it is possible to see a flicker, similar to one you might see with faulty fluorescent tubes.

Wind farms

There is no evidence that wind turbines can trigger seizures. The flicker frequency of wind turbines should be limited to 3 Hz. Newer wind turbines are usually built to operate at a frequency of 1 Hz or less.

If you have concerns about a planned or existing wind farm, you may wish to contact the British Wind Energy Association (BWEA), who can provide contact details of specific wind farm operators. (See ‘Useful information and contacts’ section at end.)
Useful information and contacts

• British Wind Energy Association, Renewable Energy House, 1 Aztec Row, Berners Road, London, N1 0PW. Telephone: 020 7689 1960 www.bwea.com; enquiries via email – info@bwea.com

• Health & Safety Executive guide on disco lights and flicker sensitive epilepsy can be found at: www.hse.gov.uk/lau/lacs/51-1.htm Helpline: 0845 345 0055

• Ofcom guidelines are available from Office of Communications (Ofcom), Riverside House, 2a Southwark Bridge Road, London, SE1 9HA. Telephone: 020 7981 3000 www.ofcom.org.uk

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Epilepsy Services, Epilepsy Action, August 2007
Further information

If you have any questions about epilepsy, please contact the Epilepsy Helpline, freephone 0808 800 5050 or email helpline@epilepsy.org.uk. Or visit our website www.epilepsy.org.uk.

Epilepsy Action has a wide range of publications about many different aspects of epilepsy. Please contact the Epilepsy Helpline to request your free information catalogue.

Information is available in the following formats: booklets, factsheets, posters, books, videos, DVDs and CDs.

Information is also available in Braille and large text.

Epilepsy Action’s support services

Local meetings: around 100 local branches offer support across England, Northern Ireland and Wales.

Volunteers: these are local people (usually with epilepsy or with a family member who has epilepsy) who have been specially trained by Epilepsy Action to give advice on a one-to-one basis. They can also give presentations about epilepsy to groups of people.

Forum4e: our online community provides an opportunity to contact other people with epilepsy from all over the world, in a safe and secure website: www.forum4e.com. (For ages 16 years and over.)

Live online advice: we run regular advice forums, where trained advisers answer your epilepsy questions live on our website. For more details, visit www.epilepsy.org.uk/liveadvice.

If you would like more information about any of these services, please contact the Epilepsy Helpline or visit our website.
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Please complete this form to tell us what you think of this publication.

How useful have you found this publication?

☐ Very  ☐ Fairly  ☐ Quite  ☐ Not at all

Is the language clear and easy to understand?

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Does this publication cover all you want to know about the topic?

☐ Completely  ☐ Almost  ☐ Not at all

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☐ Excellent  ☐ Good  ☐ Fairly Good  ☐ Poor

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Please return the completed form to:
Epilepsy Action, FREEPOST LS0995, LEEDS LS19 7YY.
We want to live in a society where everyone understands epilepsy and where attitudes towards people with epilepsy are based on fact and not fiction.
How to contact us

Telephone the Epilepsy Helpline freephone 0808 800 5050
Monday to Thursday 9.00 am to 4.30 pm Friday 9.00 am to 4.00 pm
Our Helpline staff are Typetalk trained
Fax your enquiry to us free of charge on 0808 800 5555
Write to us free of charge at FREEPOST LS0995, Leeds, LS19 7YY
edmail us at helpline@epilepsy.org.uk or visit our website:
www.epilepsy.org.uk

About the Epilepsy Helpline

In partnership with the organisation Language Line, the Helpline is able to offer advice and information in 150 languages.

We provide confidential advice and information to anyone living with epilepsy but we will not tell them what to do. We can give general medical information but cannot offer a medical diagnosis or suggest treatment. We can give general information on legal and welfare benefit issues specifically related to epilepsy. We cannot, however, take up people’s cases on their behalf.

Our staff are trained Advice and Information Officers with an extensive knowledge of epilepsy related issues. Where we cannot help directly, we will do our best to provide contact details of another service or organisation better able to help with the query. In doing this, Epilepsy Action is not making a recommendation.

We welcome comments, both positive and negative about our services.

To ensure the quality of our services we may monitor calls to the helpline.
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