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PHOTOSENSITIVE EPILEPSY

Photosensitive Epilepsy (PSE) describes sensitivity to flashing or flickering lights as well as some patterns and glare. Reactions to flashing lights vary from person to person and epileptic seizures may also be provoked in people who do not have established epilepsy as well as in those who do. Only about 3-5% of people with epilepsy are photosensitive. This reaction is diagnosed by EEG precautionary measures are advised to affected persons. Anyone can have a seizure if they watch light flickering at a fast enough frequency. A slower frequency (most commonly 15 - 20 flashes per second or hertz) is sufficient to trigger a seizure in someone who is photosensitive. However a hertz rate as low as 5 or up to 30 may still provoke some persons. In some cases it is the intensity of the light rather than the flicker which provokes the seizure. In almost all cases the person experiences a generalised tonic-clonic seizure there and then, in which they lose consciousness, fall on the ground, and convulse for approximately 1 - 3 minutes.

Photosensitivity most commonly affects children, and usually becomes evident between the ages of 6 years and 15 years, suggesting a link with early puberty. Girls are affected more often than boys. There is some evidence to suggest that photosensitivity may disappear with age. With recent advances in electronics most young people nowadays are exposed to a wide range of electronic equipment some of which may cause problems for the person with photosensitive epilepsy. Natural light sources are just as likely to trigger seizures in a photosensitive individual as artificial ones are. For example, sunlight shining on water or through leaves of trees, or flickering as the person travels rapidly past rows of trees or railings can also cause seizures. Geometric patterns with strong contrast (bars, stripes, grids, etc) may also provoke this reaction in some especially if combined with motion. Polarised sunglasses, preferably with side shades, can help to reduce the effects. In most photosensitive people, seizures are triggered instantaneously and tend to occur at the time of the provoking stimulus rather than later on. Overall, the condition of photosensitive epilepsy is relatively rare and should not lead to undue restrictions for people with epilepsy as a group.

TELEVISION

Since the 1950's television has been the most commonly reported trigger of seizures in photosensitive people. Originally it was thought that faulty functioning of TV sets was responsible, but it is now believed that neither this nor the usual movements of images on the screen seem to play any significant role in provoking epileptic seizures. The most important criterion is the nearness of the TV screen. The closer the person to the set the more the screen fills their entire field of vision and the greater the effect of the flicker frequency of the picture. Other associated factors can be tiredness and alcohol.

Guidelines for watching TV

A few simple procedures can be taken to avoid seizures resulting from watching TV.

The person should be seated at least three metres (ten feet) away from the set, and a lamp should be placed on top of the set to counteract the brightness of the screen.

Use the remote control to change channels.

A hand placed over one eye when approaching the screen will lessen the effects of the photic stimulation.

When purchasing a new TV set consider the following issues:

Most European sets are 50 hertz but it is possible to obtain 100 hertz sets which are standard in the U.S. and do not cause the problems associated with low flicker rates.

LCD (liquid crystal display) screens are flicker free.

The larger the set the more likely the image is to fill the entire visual field. Widescreen TV may be popular but the characteristics of the set and its size may cause problems for susceptible individuals that a smaller, higher hertz or LCD set won't do.

Position of the TV set:

Ideally position the TV at the furthest end of the room where it is being viewed where viewer are seated 3 metres from the screen. Ensure the area around the set is kept well lit to avoid strong contrast. Keep trailing flexes to a minimum for safety reasons ideally tack them to a surface like skirting boards. Consider wall mounting the TV where practical as freestanding sets can be knocked over during seizures.

DISCOS

For the person with photosensitive epilepsy the flashing stroboscopic lights used in some discos, can trigger seizures and are best avoided. Sometimes the management may be persuaded to switch off these lights as a precaution if a photosensitive person is attending. However, most young people with epilepsy are not photosensitive and can enjoy discos without any problems induced by these lights. If you are on the dance floor when strobes come on cover one eye with one hand and move away from the stimulus. Closing your eyes is of no benefit as the light will penetrate the skin of the eyelids.

VIDEO GAMES

Current medical opinion is that video games do not create a tendency to epileptic seizures where the tendency is not already there. However, software or games featuring patterns of flashing lights or geometric patterns may trigger seizures in a very small number of sensitive people. The reaction which a photosensitive person has to a particular game depends on the

nature of the flickering light or pattern featured combined with glare and the proportion of the visual field that the image occupies.

COMPUTER VISUAL DISPLAY UNITS (VDU's)

As with video games there is no evidence to suggest that VDU's can actually cause epilepsy. However, seizures may be provoked in a few people who already have sensitivity to the flicker and glare effect of the screen especially as the nature of use means the person is close to the screen. Only a very small number of people are affected in this way (as few as 3-5% of all people with epilepsy) which means that computer work should not be an unduly restricted occupation for people with epilepsy. Many people who are photosensitive may even still use computers quite safely if they adhere to safety advice using a screen filter to reduce glare, adjust the rate of flicker to a safer range, use an LCD screen, take frequent breaks and avoid becoming overtired. Those with PSE may find more problem arise using older rather than newer equipment due to the speed of flicker.

Liquid Crystal Display screens (LCD) are flicker free and may pose less risk to a person with photosensitive epilepsy. Glare factors may still need to be accommodated with an attachable anti-glare screen if this measure is not built in.