

Epilepsy and Working with VDUs

The following information may be helpful to people asking about the use of computers by anyone who has epilepsy.

Photo-sensitive epilepsy.

People with the specific condition called 'photo-sensitive epilepsy' may find that moving or flickering light can cause problems, and this can include computer screens (or monitors). The frequency of flashing light which is most likely to provoke a seizure varies from person to person but it generally in the range of 5 to 30 flashes per second. However, only 3-5% of people with epilepsy are in fact photo-sensitive. For many others, the problems they experience while using a computer are not due to the movement, or "flicker" of the screen image but rather to other causes such as eye strain and general stress.

Your neurologist should be able to conduct test to determine whether or not your epilepsy is photo sensitive.

Flicker-free screens (monitors, VDUs).

Most computer screens still use cathode ray tube technology (CRT, it's the same technology as a television). The image on these screens is continually "refreshed" or re-painted and this means that the image can move, or flicker. The more often the screen is refreshed the more stable the image is and the less it flickers. The refresh rate is expressed in "Hertz" (usually written Hz): the higher the Hz number, the less the flicker.

In most cases users are not conscious of this flicker and it causes no problems. However, a few years ago most screens had low refresh rates, flickered almost visibly, and did cause problems. Now most do not. It is generally accepted that a refresh rate of 100Hz or above will *not* cause problems with photo-sensitivity.

Lighting

Another problem may be caused by lighting. Modern office lighting is generally achieved using fluorescent tubes which also flicker to some degree. Slightly flickering screens and flickering lights may in some cases combine to flash at the



rate which could trigger a seizure. Try to opt for natural lighting (being careful to avoid glare on sunny days) or “old fashioned” incandescent light bulbs. Note: the newer style energy saving bulbs are in fact small folded up fluorescent tubes. Due to the technology employed, these type of bulbs are particularly prone to flickering.

Flat screens

The sorts of monitors used on laptop computers (‘LCD’ or ‘TFT’ technology) are not refreshed and do not flicker at all under normal operating circumstances. You can now buy separate LCD or TFT monitors (they are flat screens) to attach to any computer. They are expensive but the prices are coming down.

A computer equipment catalogue, (such as “Action”, tel. 0800 333 333), will give a good view of currently available monitors of all types.

General advice on reducing tension, eye strain and epilepsy related problems with computer use.

1. Sit as far back as you comfortably can.
2. Learn to relax your neck and shoulders.
3. Frequently re-focus your eyes on a distant object (preferably out of a window).
4. Move about often - get up and move the whole body - whether you feel the need to or not.
5. Your computer screen can be adjusted - keep the contrast and brightness no more vivid than is necessary for comfortable vision.
6. Choose your background and text colours and font style and size. What you like best and feel most comfortable with will almost certainly *be* best for you. (We can help you learn how to do this if required).

Further information, including a brochure on Photosensitive Epilepsy, is available from ...



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