

Health and Safety Executive ~~OC 225/1~~

Field Operations Division Renumbered **OC 225/5**

To

Medical Advisers

Employment Nursing Advisers

Employment Rehabilitation Centre Nurses

DISCO LIGHTS AND FLICKER SENSITIVE EPILEPSY

Introduction

1 Flicker sensitive epilepsy is a rare condition which may be triggered by a variety of environmental factors of which television is the most potent source. Although rare, the flicker sensitive individual is most likely to experience a full tonic clonic seizure if an episode is triggered. If flicker rates of discotheque strobe lights are kept below 5 flickers per second then only 5% of the flicker sensitive population will remain at risk of an attack. This flicker rate applies to the overall output of any group of lights directly viewed but not to banks of lights at an angle to the direction of gaze.

Background

2 Flicker sensitive epilepsy is a comparatively rare condition with a prevalence of about one in 10,000. The peak age of onset is between 10 and 14 years and females are more frequently affected than males, in a ratio of 3 to 2. Although the predisposition may be lost in later adult life, results from a follow-up study suggest that it will remain present in early adulthood.

3 The frequency of episodes of flicker-sensitive epilepsy among the public attending discotheques is not known. In one large study of 332 individuals with flicker sensitive or flicker sensitive and spontaneous epilepsy, 8 reported unpleasant sensations in a disco. However it is important to note that where an attack of epilepsy is triggered by a flickering light, typically a television set, then in most cases (84%), a full blown tonic clonic seizure will result.

4 In one large study of 171 patients, the frequency of flicker triggering a photoconvulsive response on EEG has been studied carefully. In this group 96% were sensitive to the frequency range 15-20fps, 65% to 10fps, 42% to 8fps, 25% to 6fps, but only 5% to 4fps.

5 In 1971 the Greater London Council banned the use of flicker rates greater than 8fps. To be effective however the above figures indicate that any advice on restriction of flicker rate has to limit the frequency to below 5fps.

6 This frequency should apply to the combined flicker rates on any group of lights which can be directly gazed at. Indirect illumination of the eyes from flickering lights at an angle to the line of sight is not a trigger for photosensitive epilepsy.

Reference

7 Photosensitive epilepsy: a review of the literature and a study of 460 patients, P M Jeavons and G F A Harding.

8 1975, William Heinaman, Medical Books Ltd, London.

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