EPILEPSY FOUNDATION

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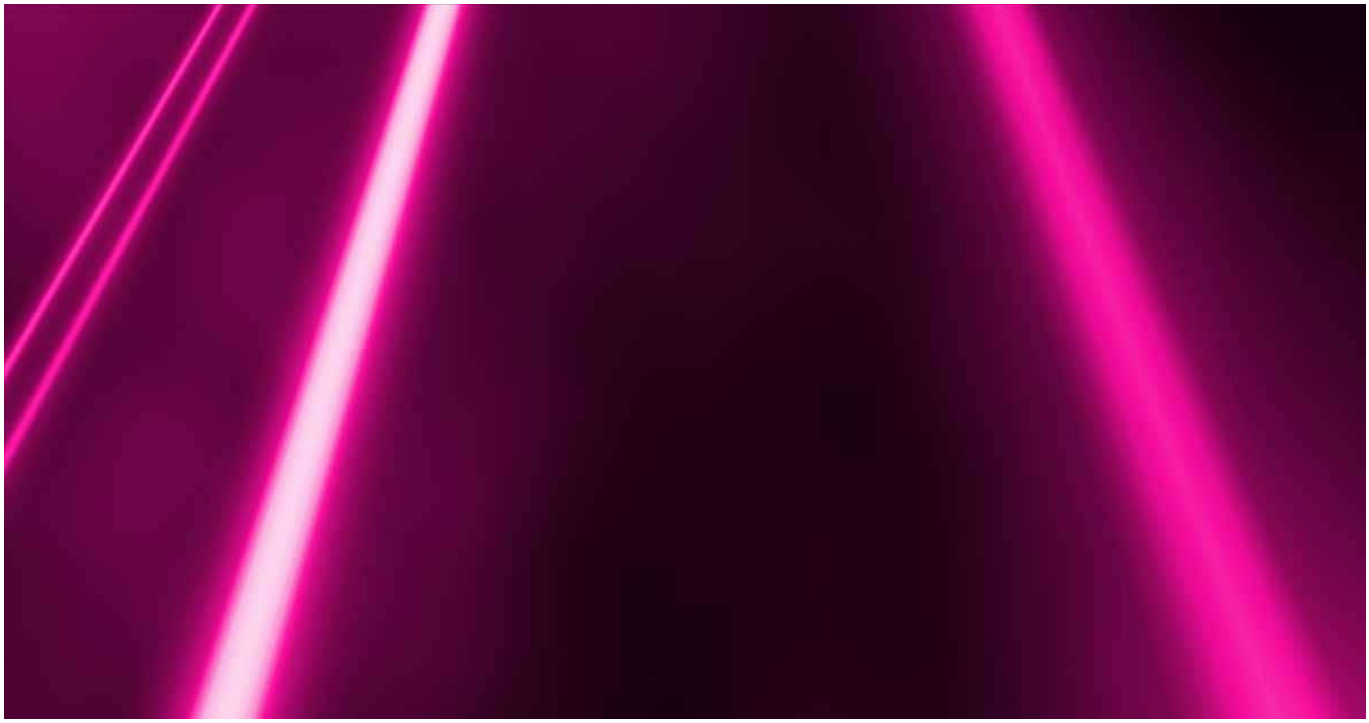
Photosensitivity and Seizures

CONTENT HIGHLIGHTS

- For about 3% of people with epilepsy, exposure to flashing lights at certain intensities or to certain visual patterns can trigger seizures.
- This condition is known as photosensitive epilepsy.
- More common in children and adolescents.
- Becomes less frequent with age.



For about 3% of people with epilepsy, exposure to flashing lights at certain intensities or to certain visual patterns can trigger seizures. This condition is known as photosensitive epilepsy.

Photosensitive epilepsy is more common in children and adolescents, especially those with generalized epilepsy and with certain epilepsy syndromes, such as juvenile myoclonic epilepsy and epilepsy with eyelid myoclonia (Jeavon's syndrome). It becomes less frequent with age, with relatively few cases in the mid-twenties.

Many people are not aware they are sensitive to flickering lights or to certain kinds of patterns until they have a seizure. They may never go on to develop epilepsy with spontaneous seizures. They could only have seizures triggered by certain photic (light) conditions.

Many other individuals who are disturbed by light exposure do not develop seizures at all, but have other symptoms, such as headache, nausea, dizziness, and more. They do not have epilepsy.

Examples of Triggers

Seizures in photosensitive people may be triggered by exposure to some of the following situations:

- Television screens or computer monitors due to the flicker or rolling images.
- Certain video games or TV broadcasts containing rapid flashes or alternating patterns of different colors.
- Intense strobe lights like visual fire alarms.
- Natural light, such as sunlight, especially when shimmering off water, flickering through trees or through the slats of Venetian blinds.
- Certain visual patterns, especially stripes of contrasting colors.
- Some people wonder whether flashing lights on the top of buses or emergency vehicles may trigger seizures in people with photosensitive epilepsy too.

Not all televisions, video games, computer monitors, and strobe lights trigger seizures. Even in predisposed individuals, many factors must combine to trigger the photosensitive reaction. Examples include:

- Frequency of the flash (that is, how quickly the light is flashing)

- Brightness
- Contrast with background lighting
- Distance between the viewer and the light source
- Wavelength of the light
- Whether a person's eyes are open or closed

The frequency or speed of flashing light that is most likely to cause seizures varies from person to person. Generally, flashing lights most likely to trigger seizures are between the frequency of 5 to 30 flashes per second (Hertz).

The likelihood of such conditions combining to trigger a seizure is small.

What should I do if flashing lights bother me?

- Check with your doctor if you are concerned about flashing lights triggering seizures. Chances are that your medical records will indicate how you responded to flashing lights during the electroencephalogram (EEG), a test done routinely in most people with epilepsy.
  - During this test, sensors are attached to the person's scalp to monitor the electrical activity of the brain in various conditions, including light stimulation generated by a strobe positioned in front of the eyes.
  - An abnormal response to various frequencies of flashing lights indicates the presence of photosensitivity.
- If you have not been diagnosed with epilepsy or have not had an EEG, ask your doctor about ordering one for you or consult a local neurologist.
- Finding out if you are photosensitive can be helpful if your daily activities include risks such as intense videogame playing.

Some Tips to Consider

Exposure To Strong Environmental Lights

- Avoid exposure to certain kinds of flashing lights if possible.
- Cover one eye and turn away from the source of flashing lights. Closing both eyes or turning your eyes in another direction will not help.

Television Screens

- Watch television in a well-lit room to reduce the contrast between light from the set and light in the room.
- Reduce the brightness of the screen.
- Sit as far back from the screen as possible.
- Use the remote control to change channels on the TV so you won't have to get too close to the set.
- Avoid watching for long periods of time.
- Wear polarized sunglasses while viewing television to reduce glare.

Video Games

- Sit at least 2 feet from the screen in a well-lit room.
- Reduce the brightness of the screen.
- Do not let children play videogames if they are tired.
- Take frequent breaks from games and look away from the screen every once in a while. Do not close and open eyes while looking at the screen. Blinking may facilitate seizures in sensitive individuals.
- Cover one eye while playing. Alternate which eye is covered at regular intervals.
- Turn the game off if strange or unusual feelings or body jerks develop.

Computer Monitors

- Use a flicker-free monitor (LCD display or flat screen).
- Use a monitor glare guard.
- Wear non-glare glasses to reduce glare from the screen.
- Take frequent breaks from tasks involving the computer.

Social Media Video Autoplay

It is possible on most social media and some website browsers to turn off or disable the video autoplay feature. Taking this step on the tools you use can help limit your risk of exposure to potentially seizure- and headache-inducing content. Find tips here.

Strobe Lights

- As much as possible, avoid being in places where strobe lights are used, such as certain bars or clubs. If a strobe light suddenly appears, cover one eye and turn away from the source of flashing lights and try to leave the area.
- School dances may also have strobes; however most schools will avoid strobe lights if there is a student with photosensitive epilepsy who wishes to attend the dance. It is important to convey this need to the school.

Visual Fire Alarm Strobe Lights

- Under the Americans with Disabilities Act (ADA), most workplaces and places serving the public, including theaters, restaurants, and recreation areas, are required to have fire alarms that flash as well as ring so people who cannot hear or cannot hear well will know there is an emergency.
- To reduce the likelihood of the strobe light triggering a seizure, the Epilepsy Foundation's Professional Advisory Board recommends
  - The flash rate be kept to under 2 Hertz with breaks every so often between flashes
  - Flashing lights should be placed at a distance from each other and set to flash together at the same time to avoid an increase in the number of individual flashes

on *Monday, September 30, 2019*

Our Mission

The mission of the Epilepsy Foundation is to lead the fight to overcome the challenges of living with epilepsy and to accelerate therapies to stop seizures, find cures, and save lives.

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