**Global epidemic of blindness on the horizon, experts warn: Hours spent staring at screens 'will rob millions of their sight decades early'**

* **High energy light from digital screens is damaging our retinas, a new study says**
* **Damage to the retinas - the light-sensitive layer at the back of the eye - is the biggest cause of central blindness**
* **Experts say it is now 'clearer than ever' that we are facing a new global epidemic**
* **But using a filter over screens can prevent further damage, researchers claim**

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Experts warn we face a global epidemic of blindness if we continue to spend hours you spend staring at a screen.

The high energy light emitted from digital screens is causing irreversible damage to our eyes by deteriorating the retinas.

Damage to the retinas - the light-sensitive layer at the back of the eye - is the biggest cause of central blindness.

And a new report warns 'it is now clearer than ever that we are facing a global epidemic' of sight loss - particularly for the millions of children who are exposed to digital screens earlier than ever.

Lead researcher Dr Celia Sanchez-Ramos said: 'It is paramount for adults and parents to act now and protect themselves from further damage.'



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Staring at digital screens for several hours can cause irreversible damage to the retinas, potentially leading to central blindness, a new study claims

Currently, there are approximately 900 million devices. Of those, 70 million are used by children in the US without eye protection such as a protective screen or glasses.

The study, conducted at University Complutense of Madrid in Spain, analyzed and compared the results of two previous studies.

The first exposed the retinas of rats to tablet screens emitting white LED light, one group with filters and the other group without filters.

After three months of exposure to white LED light, the rats exposed to tablets without filters experienced approximately a 23 percent increase in retinal cell death, which can lead to a loss of vision.

The rats that were exposed to tablets filtered with Reticare, the only eye protector based on scientific data, experienced no retina cell death.

Additionally, the study showed exposure to LED light from tablet screens favors the expression of genes that promote cell death and the enzymes involved in causing cell death.

These effects are largely reversed by using the appropriate filter on tablet screens.

**HOW YOU CAN BEAT RETINA DAMAGE**

LED screens found in most electronic devices can irreversibly damage the retina and may even lead to partial blindness.

In extreme cases, it could even lead to macular degeneration, which causes dark patches to appear in the center of the field of vision.

But Dr Celia Sanchez-Ramos says there is a way you can beat retina damage.

Using special screen filters can not only protect the retina, but protect you from the expression of genes that promote cell death.

Dr Sanchez-Ramos has developed such a filter to make light less damaging.

'Reticare', which goes over your screen, converts harmful blue light to a gentler frequency more akin to sunshine.

Pressure on various European governments has led to a number of Spanish local authorities ruling that all schools under their jurisdiction must use protective screen filters.

Reticare filters are now available online and cost between €12.95 and €49, depending on the size of the screen.

Alternatively, Barnard Levit optometrists in London can test customers' eyes using a machine called a Colorimeter.

Following this, they design a pair of glasses with a blue tint, which block the most harmful part of the color spectrum.

Dr Sanchez-Ramos said: 'These results are important because LED screens are being used by the majority of the population, adults and children, for work, school and entertainment.'

A second study looked at the amount of light entering the eye based on the device, the user, the diameter of the pupil and the distance of the device to the eye.

Scientists measured the emission of the LED screens from different devices and calculated the amount of high energy light.

LED displays of digital devices (smartphones, tablets, computers and game consoles) emit light with a high proportion of short wavelength, which is a visible radiation that is characterized by being highly energetic and can cause damage to the eyes.

The results found that children received three times more light of short wavelength. Due to their shorter arms, they are exposed to high energy light at a shorter distance than an adult who uses the same device.

More than 2,000 children between ages eight and 18 reported that, on an average day, they spent approximately 7.5 hours using devices with LED displays in academic and leisure activities.

The approximate distribution of this time is 4.5 hours watching television, 1.5 hours on computer tasks and more than an hour with video games

Recently, the European Government established a scientific commission prioritizing the study of screen risks to eye health, and has demanded all researchers to provide the results of their work.

Aside from retinal damage, computer screens can also cause the eyes to become dry, due to reduced blinking while staring at screens.

Experts recommend the 20-20-20 rule: for every 20 minutes you stare at a digital screen, turn your gaze 20 feet away for 20 seconds or more to let the eye muscles relax.