



Patient Education & FAQ's

# Can Computers Hurt My Eyes?

This has been a common question ever since computers became a normal part of our lives, some 30 years ago. For the first time we are now starting our answer with the word "Yes".

The difference is that computer screens have changed; and these new technologies are also common in smart-phones and tablets. Often this adds up to many hours of screen based activities every day.

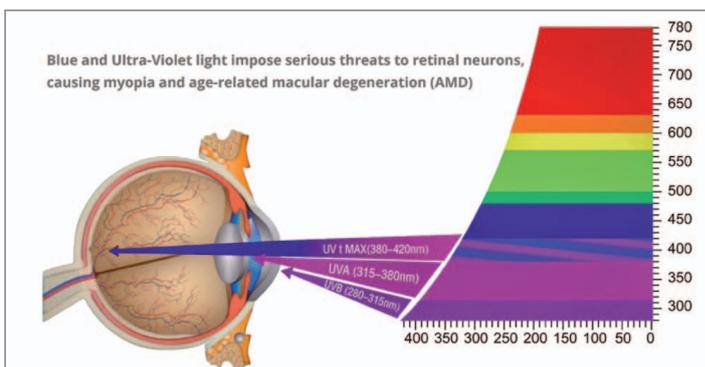


## Blue Light

High Energy Visible (HEV) Light has recently been shown to have the potential for damage to the human eye.

This HEV Light is at the blue end of the colour spectrum of what we can see. It has been shown to penetrate the eyes more intensely, thus having the potential to cause damage to the retina at the back of the eye in the future.

This means that long periods of computer screen use may lead to vision damage - a situation that is especially important for children and their developing eyes.



We can't describe the long term damage yet, but there are certainly concerns. With something as important as our eyesight, it pays to take a conservative approach and be informed.

## What Has Changed?

The reason for our concerns about HEV Light is really two fold - screen technology has changed and people are using more of them.

Over the last 5 to 10 years flat screens have become increasingly common. These are made with Light Emitting Diode (LED) technology and this radiates significantly more blue light than the screens we used previously.



LED replaced the previous Liquid Crystal Diode (LCD) screen technology because LED is more energy efficient and it produces brighter and more colourful images.

The other reason is that people use their screens for longer in the office, then read books and play games on other LED devices in their leisure time. Even toddlers are often given tablets to aid their learning or keep them occupied.

## Other Effects

HEV Light has also been associated with excessive blue light stimulation of the Circadian rhythm. This is intended for daylight to stimulate attention and wakefulness, so

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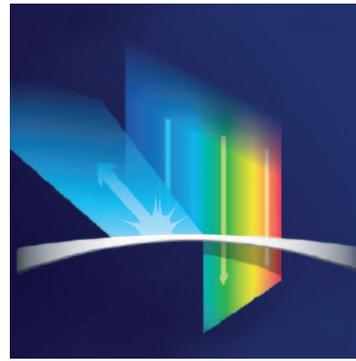
exposure at the wrong times of day can therefore disrupt sleep patterns.

This is why optometrists recommend that everyone should stop using electronic devices 45 minutes before bedtime. This is especially true for children where smart-phones and tablets are not a good bedtime activity.

## Protection

One way to protect our eyes against excessive HEV Light is to limit the time we spend in front of LED screens - but this is not always practical.

Fortunately eye protection is also available in the form of blue-blocking filters that are incorporated into prescription spectacle lenses. Either with a blue-filtering tint, or with a blue-reflecting coating.



*A front surface coating can reflect away the harmful blue light*

There is no negative to protecting against HEV (blue) light, but there are potential negatives if we don't.

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*More information? [www.ncbi.nlm.nih.gov/pmc/articles/PMC3081800/](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3081800/)  
[www.dailytelegraph.com.au/entertainment/arts/your-childs-phone-and-tablet-could-be-harming-their-eyes-expert-warns/story-fni-v7r7y-1227035442822](http://www.dailytelegraph.com.au/entertainment/arts/your-childs-phone-and-tablet-could-be-harming-their-eyes-expert-warns/story-fni-v7r7y-1227035442822)*