

## Computer screens, smartphones, and TVs – blue light from electronic devices raising concerns for eye health

Your morning probably starts off in a routine. You might watch the weather report on your flatscreen TV before jumping into the shower, answer an email on your tablet shortly after getting dressed, or text a friend while eating breakfast.

We use our eyes much differently than any generation before us, and dramatic shifts in digital tool usage and media consumption are exposing eyes to blue light from electronic devices, which could adversely affect your vision in the future.



Studies show denizens of the digital world are significantly increasing time spent in front of their computers, smartphones, and other blue light-emitting devices. The average American spends about two hours and 19 minutes online plus another two hours and 20 minutes conducting non-voice activities on tablets as well as mobile phones every day, according to a survey by eMarketer. Additionally, recent Nielsen ratings reveal that the average American spends about 34 hours per week watching live television, and another three to six hours watching recorded programs.

What does this mean for our eyes? Blue light, which radiates from digital sources like computers, smartphones, and televisions, can have an adverse effect on visual cells. In fact, researchers are learning blue light, found in sunlight and some indoor lighting, plays a role in the incidence and severity of age-related macular degeneration (AMD).

Fortunately, Mother Nature arms us with macular pigments, zeaxanthin (zee-uh-zan-thin) and lutein that act like “internal sunglasses”. These pigments protect and enhance vision, and are found in the center of the macula in the back of your eye. Internal sunglasses protect the cones and rods that are responsible for central and peripheral vision, respectively and can enhance vision as well.

The density of macular pigment is largely determined by diet, but can change as we age. As macular pigment becomes thinner or less dense, harmful blue light can reach and damage the photoreceptors (rods and cones). The resulting damage can lead to visual performance challenges and contribute to other eye issues like fatigue, strain, sleeplessness, and even more serious conditions like AMD.

Thick, or dense macular pigment can improve visual acuity for activities like reading in dim light or needlepoint; reduce sensitivity to bright light like sunlight or stadium lights; improve recovery time from glare from things like oncoming headlights; and enhance contrast sensitivity such as seeing an object clearly against its background.

Increasing macular pigment density can be achieved by replenishing the macular pigments zeaxanthin and lutein. According to the [American Optometric Association](#), (AOA) of the 600 carotenoids found in nature, zeaxanthin and lutein are the only two that are deposited naturally in the macula.

Since the human body does not produce the zeaxanthin and lutein it needs, good nutrition is essential. Lutein is plentiful in leafy-green vegetables like spinach, kale, and broccoli. Zeaxanthin, on the other hand, is found in foods like corn, eggs, and peppers, but only in trace amounts. For most Americans, a significant zeaxanthin dietary gap exists, resulting in less protection and potentially decreased visual performance.

The quantity of these pigments in the macular region of the retina can be measured with a macular pigment optical density (MPOD) exam. MPOD exams are quick, non-invasive, and available through leading optometrists.

For those who cannot consume enough zeaxanthin and lutein through the diet, eye vitamins like [EyePromise](#) offer macular health formulas designed to increase MPOD and build internal sunglasses that provide vision protection and enhancement.

As computer, tablet, and smartphone usage increases, society's collective exposure to blue light will also continue to surge. Optimal health of our internal sunglasses is imperative in safeguarding our eyes from harmful blue light today and into the future.