BLUE LIGHT HAZARDS

TRI-SERVICE VISION & CONSERVATION READINESS PROGRAM

POTENTIAL HAZARDS OF BLUE LIGHT

Your body uses **blue light** to regulate your sleep pattern known as your *circadian rhythm*. If you are exposed to **blue light** close to bedtime, it may:

- Negatively affect your sleep pattern
- Decrease your concentration
- Decrease your physical and mental performance
- May lead to eye strain

DOs & DON'Ts of OF BLUE LIGHT

- The best time for **blue light** exposure is upon awakening / in the mornings.
- Getting plenty of natural light exposure during the day is recommended. **Blue light** during waking hours helps us stay awake and alert.
- Avoid **blue light** as bedtime approaches. Avoid using digital screens 2-3 hour before you go to bed.
- Utilize your digital devices settings to minimize **blue light** exposure by enabling the devices blue light filter or night mode.

BLUE-BLOCKING EYEWEAR may or may not help. At this time, research results are inconclusive. More research is needed to determine their effectiveness.

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Reference: 1 NICHD F31HD082858
Resources: www.aoa.org | www.aao.org

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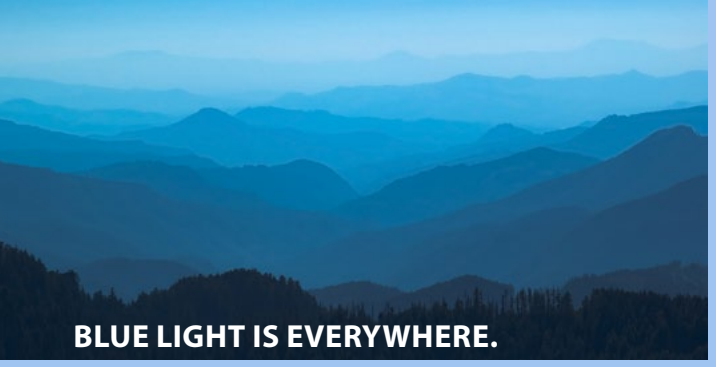
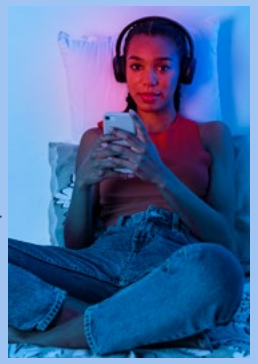


BLUE LIGHT IS EVERYWHERE.

It is in the blue sky above and in the bodies of water that surround us. Humans have evolved to function within a predominately blue environment, and this is evident within the physiology of the human eye. Human eyes have five different varieties of light receptors, of these, three are dedicated to function well in the blue light spectrum. Why then is there such a current concern over blue light exposure?

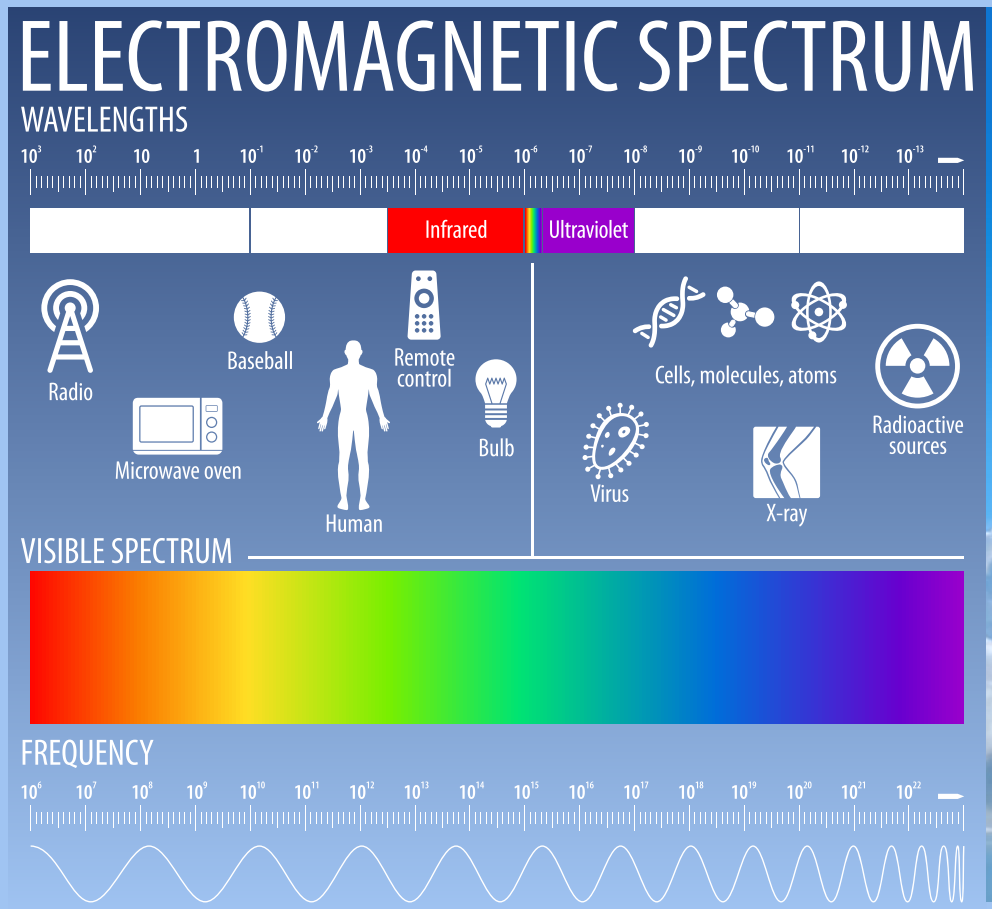


IN THE NEWS
ABOUT BLUE LIGHT

There are numerous news reports and stories about **blue light** and the dangers of digital device overuse. With the ever-expanding use of smartphones, tablets and computers combined with the ever-increasing amount of time spent on them, it is natural for us to be concerned. A recent study[1] showed the average teenager spends an average of 9 hours a day looking at artificial blue light (smartphones, tablets, computers, T.V. screens). In 2020, with the COVID pandemic and most people in quarantine, it is safe to assume that digital usage has increased. Thus, concern over the hazard of **blue light** has correspondingly increased.

WHAT IS
LIGHT?

Visible light is electromagnetic radiation that can be perceived by the human eye. There are other types of light including ultraviolet and infrared, but they are not visible to the human eye. Light is made up of different colored wavelengths. The visible light spectrum is from 400nm to 700nm (See figure below). The smaller the wavelength, the higher the energy of a given wavelength.



WHAT IS
BLUE LIGHT?

Blue light is the electromagnetic radiation with wavelengths from about 400 to 500 nm (See above). **Blue light** is everywhere, from the sun to your electronic devices to fluorescent and LED lighting. When high energy blue wavelengths collide with our atmosphere, the blue light scatters causing the sky to look blue.

BENEFITS
OF BLUE LIGHT

Blue light suppresses melatonin production. Melatonin is the hormone that regulates the sleep-wake cycle. Suppressing melatonin may boost your attention, improve your reaction time, and improve your mood.