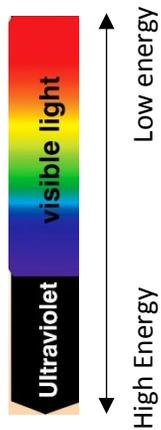


What is Blue Light?



Light exists on a spectrum of visible and invisible light, from red to blue and beyond. Red light has relatively long wavelengths, meaning that it is “low energy”, while blue light has short wavelengths, making it “high energy”. The shorter the wavelengths, the higher the energy levels.

Blue light accounts for around one-third of all visible light and is separated into two categories: blue-turquoise and blue-violet. Blue-turquoise light, the low energy blue light, is sometimes referred to as “beneficial blue light”. It is believed to do things like regulate the sleep/wake cycle, enhance mood, and contribute to memory and cognitive performance. Blue-violet light is considered “harmful blue light”, and is higher energy. Emerging research indicates a possible link between blue-violet light and long-term vision issues such as macular degeneration.

After blue light, comes ultraviolet light (UV). The UV light spectrum is invisible but warming. UV light is very high energy and is responsible for things like sunburns and snow blindness. Because UV light immediately follows blue light on the light spectrum, it isn’t surprising that blue light in excess can cause eye issues!



BLUE LIGHT



Patient Information

From the moment we are born, our eyes are exposed to blue light from both outdoor and indoor environments. The sources of blue light are becoming more important in our day-to-day lives, and as we spend more time staring at devices in close proximity to our eyes, our exposure continues to increase.

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How Am I Being Exposed?

Sunlight is the main source of blue light. Being outside during daylight is where the most exposure comes from. However, more and more blue light is coming from the digital devices we use on a daily basis. Computers, tablets, and smartphones, as well as fluorescent and LED lights, emit significant amounts of blue light.

Why Should I Limit Exposure?

The human eye is very effective at blocking out UV rays and preventing them from reaching the back of the eye. However, virtually all blue light passes through the eye to the retina. Too much exposure to the retina and its light-sensitive cells can cause damages and can eventually lead to macular degeneration, the leading cause of vision loss.

Blue light is also known to cause eye fatigue and digital eye strain. Because blue light is high energy, the light rays scatter more easily than other visible light, meaning that it is not as easily focused by the eye. This can lead to eye strain when using devices such as your smartphone or computer, as the eyes are constantly working harder to focus the blue light being emitted.

Blue light is also a key factor in the sleep cycle. A common tip in online articles suggest leaving your phone and electronics out of the bed room when you have a history of sleepless nights and slow mornings. The reason behind this is the effects that blue light has on your sleep cycle. The blue light tricks your brain into thinking that it's seeing daylight, which causes a decrease in melatonin production, keeping you awake. But blue light in the daytime can help maintain a healthy sleep cycle!

What Can I Do to Limit Exposure?

Some helpful tips include things like adjusting the brightness level on your screens, dimming the lights around you, and limiting screen time. However, many people use computers for work and kids are on digital devices nearly every day, both at school and at home. Even with the above tips, you can be exposed to an excessive amount of blue light. This is where protective lenses and tints come into play.

BluTech

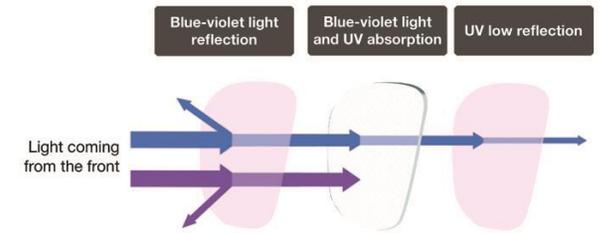


BluTech lenses filter out UV and blue-violet light. They help reduce glare, and improve contrast while still allowing natural depth and color perception. The BluTech lenses Nova Eye Care offers are amber-tinted and can be placed in any frame and lens. You don't have to have prescription glasses to experience the benefit of BluTech lenses, as the tint can be applied to non-prescription lenses as well. BluTech also offers outdoor lenses.

BluTech Wearer Survey

- 98.2%** Noticed "Significant sleep improvement"
- 99.1%** Eyes "More relaxed indoors"
- 65.1%** "Significant reduction in headaches/migraines"
- 93.8%** Absolute "Yes to wear as everyday pair of glasses"

Crizal Prevensia



Crizal Prevensia is a coating placed over the lenses of your glasses, and can be placed on almost any lens and frame. The antireflective and non-glare coating selectively filters blue light. It reduces the amount of blue-violet light the eye is exposed to while allowing blue-turquoise light to filter through. This allows the body to use the blue light's positive attributes, while decreasing the negative effects. The Prevensia lens is completely clear, but has a slight blue hue on the front side where the blue light bounces off. Prevensia has been proven to deflect blue-violet light by 20% and has an Eye-SPF of 25, meaning that it blocks 25 times the amount of UV rays than the eye can alone.



One of the biggest benefits of having Prevensia lenses, especially in Alaska, is its ability to allow blue-turquoise light through the lens. With high statistics of Seasonal Depressive Disorder and sleep issues, it is essential that we are exposed to this low energy blue light to help regulate our moods and our sleep cycle.

Please feel free to ask our doctors or any member of our staff if you have any question or are interested in blue light filtering lenses!