



AF Blue Light Reduction Film & Filter

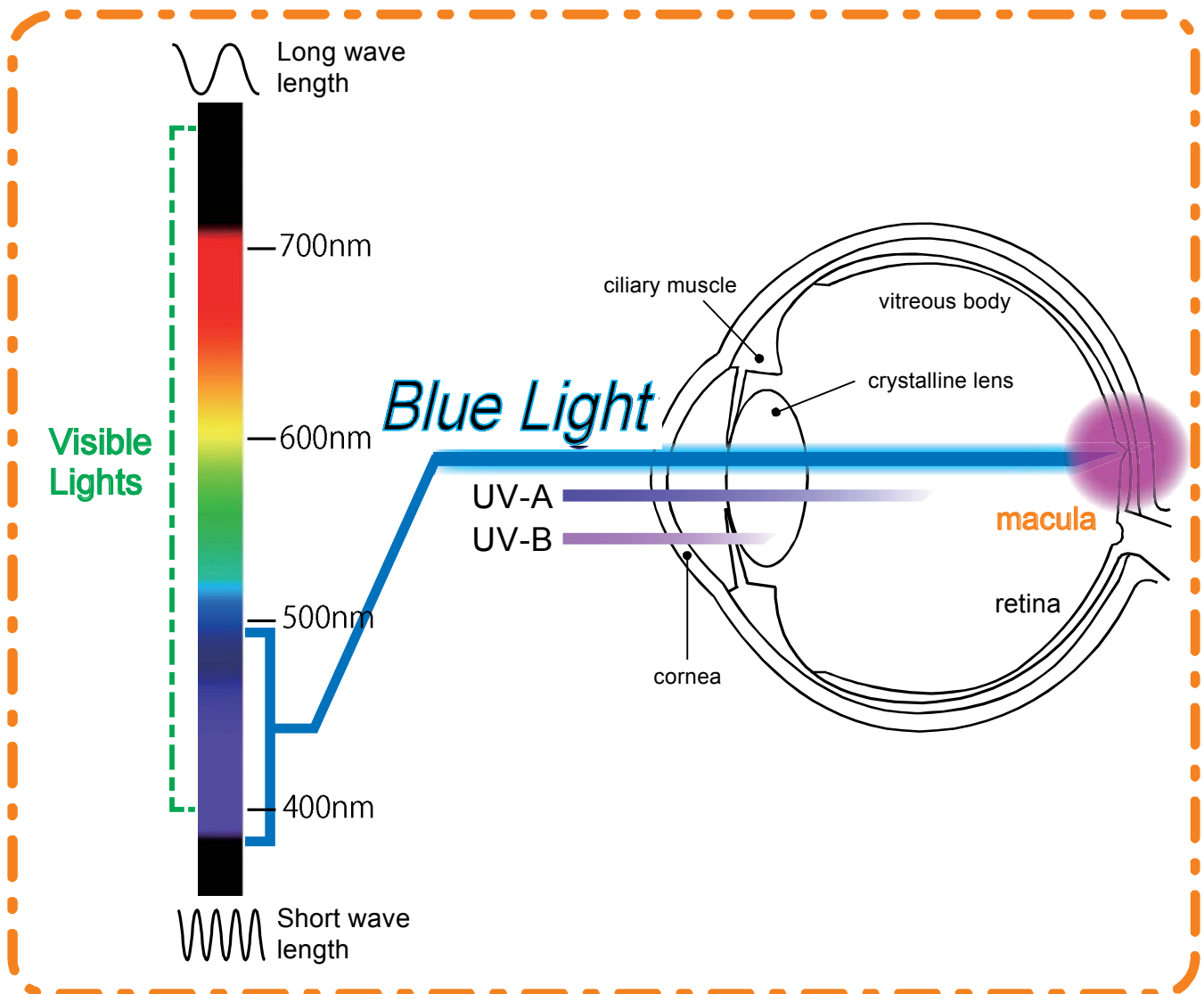


What is Blue Light?

Wave lengths of Blue Light are between 380nm and 495 nm in the range of visible lights (from 400nm to 780nm). Blue Light has strong energy with very short waves, very close to the wave length of UV-A light. Blue Light is widely used as the light source to produce crisp images in the LED light sourced products such as PCs, Cell Phones, Tablets, Game machines and TVs.

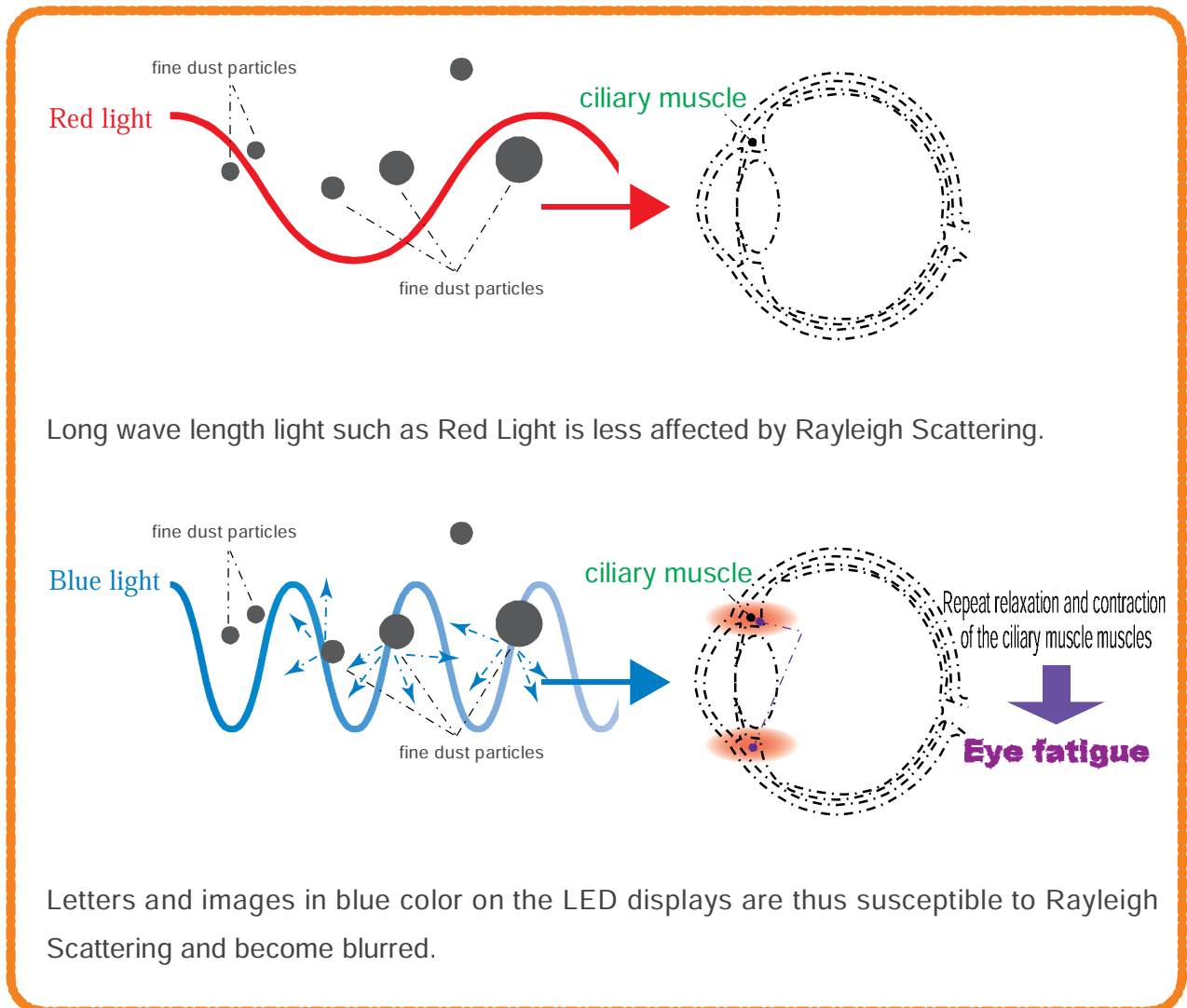
The vitreous body and the crystalline lenses in the eye absorb UV lights but Blue Light reaches the retina with strong energy. The impact of Blue Light is believed to cause eye fatigue and may even cause age-related macular degeneration, according to some experts.

A prolonged exposure of the eye to Blue Light is believed to cause health hazard that is now called Blue Light Hazard, as many media report.



Why eye fatigue occurs?

Blue Light is very close to UV lights in terms of wave length. Because of shorter wave length, Blue Light is believed to create "Rayleigh Scattering" that causes phenomenon where Blue Light tends to scatter easily in the air. Blue Light easily hits fine dust particles, because of its short wave length, in the air and cause the Scattering of lights.



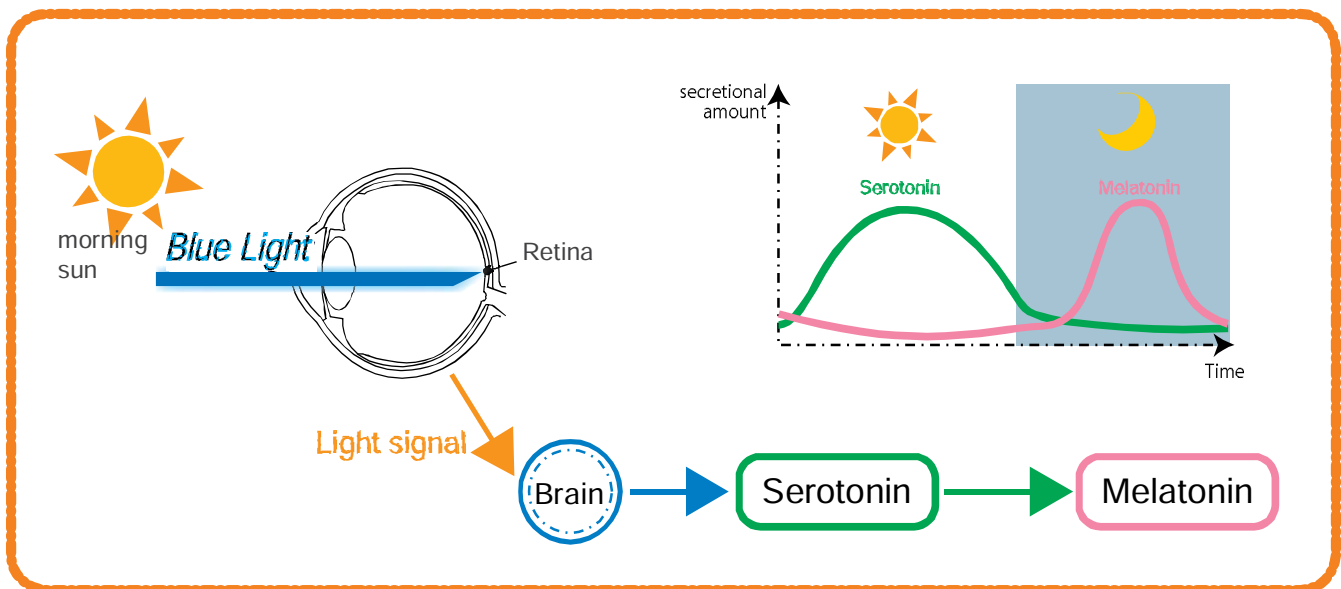
The ciliary muscle in the eye tries to focus on the blurred image and repeat relaxation and contraction of the muscles, the movement that is believed to cause eye fatigue. Blue Light from the far in the air does not reach the eye because of the distance from the light origin.

Blue Light from the near such as the Blue Light emitted from the LED displays on the PCs, Cell Phones, Tablets, Game machines and TVs reaches deep inside of the eye and believed to cause eye fatigue.

Blue Light and Circadian rhythm

Blue Light Hazard has become a well talked about topic in the public. The wave length of 460nm in the wider lengths of Blue Light (380nm - 495nm) is believed to confuse our body clock called Circadian Rhythm.

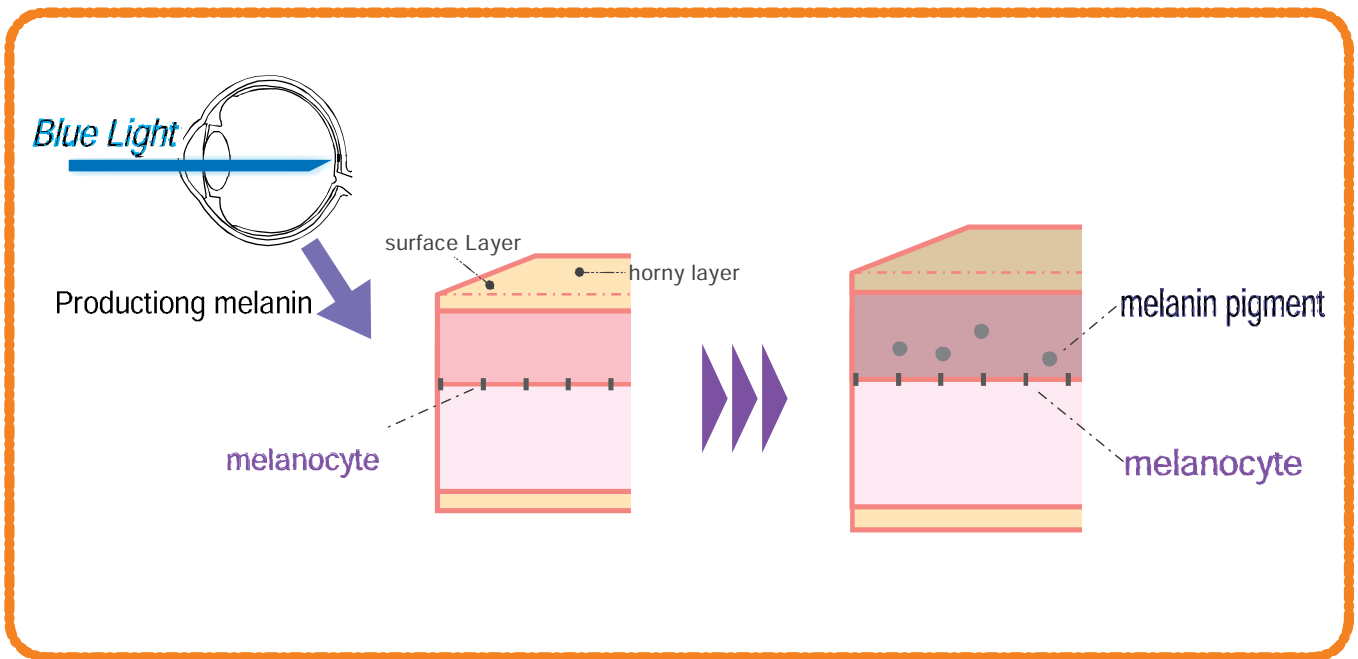
A human body is believed to run on the 25 hour clock rhythm, while the earth runs on the 24 hour clock system. We have one hour time difference a day between our Circadian Rhythm and the earth's movement. The body is believed to reset the body clock by exposing it to the sun light in the morning. Blue Light in the sun is believed to increase secretion of Serotonin hormone to wake the body up. Blue Light is also believed to decrease the secretion of Melatonin hormone, which works to relax the body to make it sleep ready. Melatonin hormone is set to secrete about 15 hours after the body was exposed to the morning sun light. Blue Light is therefore a necessary light for the human body. In the evening, when the sun goes down, secretion of Melatonin hormone increases while Serotonin hormone decreases and the body gets ready for a sound sleep, according to some experts. Natural Blue Light exists only in the sun. When the sun goes down so does Blue Light.



We are now surrounded by artificially produced Blue Light. LED displays are the main source of Blue Light that comes into the eye in the night, when there is no natural Blue Light. Looking into Blue Light in the night, the brain may get confused to send a signal to the body to secrete Serotonin hormone, while discouraging secretion of Melatonin hormone, to make the body awake. Each person may respond to the night time Blue Light, differently, according to some experts. Melatonin hormone is an anti-oxidization substance and believed to act to remove the reactive oxygen to keep the body young and healthy. Controlling of Blue Light to the body is necessary to maintain healthy living.

Blue Light and Cosmetic Concerns

Blue Light (380nm - 495nm) has the strongest energy only second to UV lights (10nm - 400nm). It is known that UV-A and UV-B lights are harmful to human body. A part of Blue Light has the same wave length as the one that UV lights have. Exposure of the eye to Blue Light is believed to trigger production of Melanin in the skin. Melanin, produced from the Melanocyte in the skin is believed to cause spots in the skin.



Direct exposure of the skin to Blue Light is harmful as well. Blue Light penetrates deep into the skin cells and produce Reactive Oxygen and Single Oxygen that are believed to cause aging of the body.

