Can LED Lights Damage the Eyes or Disrupt Sleep?

LED light bulbs are becoming very popular, but what is their effect on the eyes? Low Emitting Diode lighting uses up to 95% less energy than their incandescent counterparts. Before replacing your home or workplace's indoor lights with LEDs, consider two downsides:

- LEDs do not give off near-infrared radiation, which is necessary for health
- They emit large amounts of blue light, which disrupts sleeping patterns and over time can contribute to eye disease.

One of the benefits of LED lights is that they are cooler to touch. However, this is part of the problem. LED lights do not give off near-infrared radiation. This type of radiation comes from the sun; it is also emitted by incandescent bulbs and halogen bulbs.

Near-infrared heat is important for good health. It deeply penetrates the skin, even through clothing. Near-infrared light activates mitochondrial ATP.[1] When this form of light strikes the retina, it primes the retinal cells to repair and regenerate. LED lights cannot do this. Therefore, they should not be the primary source of light throughout the day.

Blue Light Problems with LEDs

The other problem with LED lights is the huge amount of blue light they generate. Blue light is shortest wave length light in the visible spectrum. It is well-researched and widely accepted as harmful to the eyes.[2] Excessive blue light damages the retina, macula and photoreceptors.[3] We get blue light from the sun – this is one of several reasons why sunglasses outdoors are highly recommended.

Blue light is strong in LCD screens (modern TVs, computers, phones, tablets). Perhaps you have heard the warning that staring at screens in the evening can disrupt sleep. Blue light regulates the production of melatonin. Thus, putting away the screens 2 hours before bed can result in better sleep. LED lights in your environment have the same effect. Lights are typically on between dusk and bedtime. Therefore, spending the entire evening exposed to LED lights can disrupt sleep. Glasses that block blue light might help. Amber colored lenses are the best for neutralizing blue light.

Dr. Alexander Wunsch, a leading researcher on photobiology, recommends purchasing a low-voltage incandescent halogen lamp to use on dark evenings. Fix it to operate on a DC transformer. Ideally, you should be able to adjust the output to between 6 volts and 12 volts. DC (Direct Current) has no flicker and no dirty electricity. Also, you can dim and brighten the light as needed.[4]

1. “Near-infrared light increases ATP, extends lifespan and improves mobility in aged Drosophila melanogaster” Rana Begum et. al. The Royal Society Publishing Biology Letters. Published 18 March 2015. DOI: 10.1098/rsbl.2015.0073
2. Harvard Health Letter. Blue light has a dark side. http://www.health.harvard.edu/staying-healthy/blue-light-has-a-dark-side
3. Free Radic Biol Med. 2015 Jul;84:373-84. doi: 10.1016/j.freeradbiomed.2015.03.034. Epub 2015 Apr 8. Retinal damage induced by commercial light emitting diodes (LEDs). Jaadane I. et. al.
4. How LED Lighting May Compromise Your Health. October 23, 2016. Dr. Mercola. Mercola.com. Accessed 12/4/16

/

845.255.8222
3 Paradies Lane, New Paltz, NY 12561