LED lighting: why you need orange sunglasses

Incandescent, CFL and LED hanging bulbs

By Catherine Haug, Nov. 14, 2016; updated 1/4/17 regarding f.lux app (photo, right from Recycle Nation (1))

About a year ago, a health newsletter newsletter had an article on problems with LED lighting. They explained the issue of LED blue light at night and how it can impact our internal clocks, sleep patterns, and immune systems. Not long after that, Edd mentioned that when he drives the school bus in the dark early morning hours, oncoming cars with LED headlamps blind his vision until the car is well behind him. I seldom drive at night so had not noticed that problem, but I believe he is right.

Nowadays, most of us have smartphone, tablet and computer screens lit by LEDs, and many of us have LED TV screens. We've also begun to replace our homes' incandescent and CFL lighting with LED lights. Do we face risks from these?

The answer is YES. But there are things you can do to minimize that risk.

Cool vs warm light

The light from the sun (daylight) is a cool white, slightly blueish color perfect for staying awake during daytime hours; the light from candles is a warm white, slightly yellowish, and is the most healthful light color when the skies are dark. Your body's internal clock is geared toward cool white light during the day, and warm white light at night. When you are exposed to cool white (blue) light during nighttime hours, your body responds by waking or remaining awake; this response, if oft-repeated, can lead to inability to sleep at night, and throws off your internal clock.

In other words, during the day, LED bulbs are similar to daylight and are in synch with your internal clock, but during the night, they confuse, and can eventually mess up your internal clock.

Comparison of light bulbs types

NOTE: Mercola's article "*How LED Lighting May Compromise Your Health*" (3) has excellent graphics on the color temperatures and light colors from various light sources.

Incandescent bulbs (traditional lighting) give off warm (yellowish) white light, mimicking candlelight. Of the three types, they radiate the most healthful light when it is dark outside. But they are high energy users and don't last as long as the other types.

CFL bulbs (fluorescent lighting) are medium energy users but contain toxic mercury so must be disposed of properly (don't throw them in the trash); see CFL and LED bulbs: how to dispose/recycle them. Better-quality CFLs have a perceived color similar to incandescent lighting, but are less efficient than lower-quality CFLs that have a slightly greenish tint (from radiation of more blue light).

LED bulbs are the most energy efficient, but emit a cool white (blueish) light similar to daylight. However, they can be tinted to give off a warmer (yellowish) light for use after dark.

A BIG problem for our communities is the use of LEDs in street lighting. While they are more energy efficient than other types of lighting, their glare and blueish light are already causing problems for street and highway safety around the country. The American Medical Association (AMA) has issued warnings about this problem, citing the following negative issues that result from driving at night amidst LED lighting (4):

- Reduced sleep times
- Dissatisfaction with sleep quality
- Excessive sleepiness
- Impaired daytime functioning
- Obesity
- (Not listed in AMA warnings is potential car accidents that can happen as result of the glare).

See Mercola's article (4) for more on this.

Dealing with LED lighting

The hormone melatonin, a.k.a the "sleep hormone," governs your internal clock. Increasing your body's melatonin production can improve your sleep. But exposure to blue light inactivates melatonin production, thus making it hard to sleep. Blocking blue light at night, can restore melatonin production and help you to sleep better.

LED bulbs have come a long way from the first ones that hit the market with their marked bluish light. You can now buy bulbs that radiate a warm white light similar to incandescent. But LED screens still have that bluish light. If you use your smartphone/ tablet/computer or LED TV screen at night, you are exposing your eyes to the wrong kind of light for nighttime, which if repeated often, could keep you from being able to go to sleep during the night.

In general, especially if driving at night or when at home after dark (if you have LED bulbs, LED TV or digital screens/smartphones), you should wear **orange-tinted sunglasses** which filter out the blue light of LEDs. These are available as regular sunglasses, or clip-ons to wear over your regular glasses. (Image, right, from Amazon (8); these glasses are also available at Walmart).

Uvex Skyper Blue Light-Blocking Glasses

Consumer Reports tested three different types of yellow and orange lenses and found (7):

- Orange-tint was the most effective, blocking almost all blue light;
- Medium-yellow tint blocked about half of the blue light;
- Light-yellow tint blocked only about a third of the blue light.

For digital devices (smartphones, laptops, etc.), you can purchase **color-changing apps** (blue light-blocking software) for Android and Apple devices. I use f.lux app (5) for my laptop, but there are other brands you can use, such as Iris (6). Search "LED color changing apps" for brands and sources.

1/4/17 update: f.lux app has some vulnerabilities when used on Windows devices (9), that provide a path for hackers to access your computer; I am unable to find documentation about any vulnerabilities on Apple devices.

Apple may soon incorporate ability to change color of screen at night into their operating system; you can also purchase (for 99 cents) the Candlelight app for Apple devices on iTunes (10) or the App Store.

I don't know if there are any for LED TV screens, but you can get a blue-light protective screen for LED computer monitor screens; some can also be used with LED TV screens (see Amazon; search for model number 'B00L06EZBI' for an example). These are more expensive than the glasses but protect everyone in the room with the TV.

References

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