Shining a Light on AMA's Dim View of LED Street Lamps

By Erik Lief — October 25, 2016

Small towns and big cities across America are replacing overhead streetlight bulbs with brighter, longer-lasting versions. Embraced by communities mostly as a money-saving measure, the move can also deliver added quality-of-life benefits, in some cases even deterring crime by illuminating areas of town that were once poorly lit.

However, the American Medical Association is seeing the switch in a whole different light, even raising some health concerns that it’s calling potentially "harmful." But to us, those concerns seem baffling and somewhat overblown, because when the AMA’s policy statement is examined it's hard to discern what its concern is all about.

Before we get into that, let's first look up and see what's going on above our heads. In this nationwide street-scene overhaul, softer, high-pressure sodium lights are being phased out in favor of brighter, light-emitting diode (LED) lamps.

LED lighting, which has fallen in price enough to make it an affordable upgrade, burns more efficiently and lasts far longer than conventional street bulbs. They can function for 15 to 20 years -- in some cases four times longer than older bulbs -- and that durability also reduces the need for manual servicing. They also consume a lot less electricity. Small towns are "saving more than $57,000 annually [2] on energy costs," while annual savings in big cities like New York can total $14 million -- "$6 million on energy costs and $8 million on maintenance [3]."

But the AMA believes the lights can be too bright, which "create worse nighttime glare than conventional lighting," the physicians’ group said in a statement released in June [4] titled AMA Adopts Community Guidance to Reduce the Harmful Human and Environmental Effects of High Intensity Street Lighting.
"Discomfort and disability from intense, blue-rich LED lighting," it continued, "can decrease visual acuity and safety, resulting in concerns and creating a road hazard." Now, this might be somewhat true if every car on the road was a convertible, and the driver was directly exposed to these lights. But automobile windshields work well at filtering out glare -- especially at night, and from a high angle -- so this concern seems somewhat foggy.

Add to that, the AMA states that blue-rich LED street lamps "operate at a wavelength that most adversely suppresses melatonin," a hormone that affects sleep. But first, if they were a sleep disrupter that statement would apply to street lamps in residential areas only (as the AMA notes), which shine directly into homes.

It's estimated that "LED lamps have five times greater impact on circadian sleep rhythms than conventional street lamps," states the AMA. "Recent large surveys found that brighter residential nighttime lighting is associated with reduced sleep times, dissatisfaction with sleep quality, excessive sleepiness, impaired daytime functioning and obesity." It appears that surveys were conducted; there were no mention of any studies.
But if these LED light rays were such a problem -- and from such a distance -- then why haven't we been warned by these doctors about a far bigger threat to our nightly sleep routines: cellphones and tablets? Their ubiquity is now unquestioned, and they are directly in our faces, emitting the same light, every day for hours at a time. But we're to believe that the outside light, and filtered through windows and drapes is a bigger health threat?

Moreover, just because there is a basis to state that a reduction in melatonin is less than optimal, it is another thing altogether to claim that any melatonin reduction is harmful.

And if those two reasons didn't make us wonder somewhat, there's this:

"The detrimental effects of high-intensity LED lighting are not limited to humans. Excessive outdoor lighting disrupts many species that need a dark environment. For instance, poorly designed LED lighting disorients some bird, insect, turtle and fish species."

Huh? The AMA trying to strengthen its case in the same policy statement by including LED's potential impact on wildlife? What does that have to do with concerns about human health?

All in all, when you take a step back, what emerges is a need for some common-sense thinking and decision making. Clearly, the use of LED lamps is a huge energy saver, especially as the technology is being put to use; it's now utilized by roughly 10 percent of U.S. municipalities. And just as clearly, if brightness is a strong consideration, communities should simply make the adjustment by using as low a wattage as possible. Take Westwood, Massachusetts for example:

This town just west of Boston "retrofitted more than 1,400 street lights with LEDs measuring 4,000K," measured on the Kelvin scale, reports the Boston Globe [2]. According to the town’s energy manager, Westwood "tried out LEDs of varying temperatures. Residents preferred those that were 4,000K, he said; the 5,000K LEDs, with their white light, were irritating, and residents felt the 3,000K LEDs were not bright enough for the streets."

To that point, that's where the AMA hits the bull's eye, by stating: "Recognizing the detrimental effects of poorly-designed, high-intensity LED lighting, the AMA encourages communities to minimize and control blue-rich environmental lighting by using the lowest emission of blue light possible to reduce glare." And we agree.

Finally, two other overlooked factors: It's safe to say that any new lighting requires time for residents to get adjusted to it. And since one of the strong selling points of LED lamps is that they require less maintenance, it stands to reason that they will be cleaned less often, and dirt accumulation over time will serve to dim their brightness. But these points above expose how the AMA’s dim view of this lighting advance is unjustified.

COPYRIGHT © 1978-2016 BY THE AMERICAN COUNCIL ON SCIENCE AND HEALTH


Links