

The first generation

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Some cities are taking another look at LED lighting after AMA warning. The Washington Post
melatonin helps balance the reproductive, thyroid and adrenal hormones and regulates the body's circadian rhythm of sleeping and waking.

"As a species, we weren't designed to see light at night," Siminovitch said.

Meanwhile, the "dark sky" movement criticizes LEDs as a major contributor to what it calls the "light pollution" that humans cast into the night sky.

Effect on sleep cycles

In its warning, the AMA cited the melatonin issue, noting that studies have linked bright LEDs to reduced sleep time, poor sleep quality and impaired daytime functioning.

It referred to evidence that exposure to high-intensity light at night might increase the risk of cancer, diabetes, cardiovascular disease and obesity. And it cautioned that intense LEDs have been associated with "discomfort and disability glare," which might impair nighttime vision for drivers.

Finally, the AMA cautioned about the harmful effects of bright LEDs on wildlife, particularly nocturnal animals, birds and insects.

"These lights aren't just bad for us," said Mario Motta, one of the authors of the AMA report, "they're bad for the environment, too."

The AMA did commend LEDs for their energy efficiency and effectiveness, but it urged cities to minimize blue-rich outside lighting and recommended the use of LEDs no brighter than 3000K.

Tony Dorsey, a spokesman with the American Association of State Highway and Transportation Officials, said that the organization's environmental committee is studying the AMA's report but that association members haven't seemed concerned about the use of 4000K LEDs on roadways.

The Department of Energy said LEDs should be used with "prudence" but praised their overall performance. It said the AMA had added "another influential voice" to the issue.

Others, including the Lighting Research Center at Rensselaer Polytechnic Institute in Troy, N.Y., said the lights pose less risk than the AMA suggests. The research center pointed out that the AMA report is based on

extended exposure to high-intensity LEDs and said the blue-light hazard of LEDs “is probably not a concern to the majority of the population in most lighting applications.”

Motta stood by the AMA’s concerns about high-intensity LEDs and said there is no downside — either in cost or efficiency — to choosing a lower-intensity light.

Sleeping in Seattle

Some cities are satisfied with their higher-intensity LED streetlights.

In Seattle, which has installed about 41,000 new lights since 2010, Thomsen, the spokesman for Seattle Light, attributed the early complaints to residents’ surprise at the sharp difference in brightness between the old sodium lights and the new LEDs.

Light from the new fixtures is comparable to moonlight and provides excellent visual acuity for drivers, Thomsen said. Police especially like them, he said, because they enable people to distinguish colors at night. “The police say they get much better witness descriptions,” Thomsen said.

Thomsen also noted that even though the Seattle LEDs are rated at 4100K, that is significantly lower than most computer screens, laptops and televisions.

But Pete Strasser, technical director at the International Dark-Sky Association, said moonlight contains far less blue light than do high-intensity LED lights.

A little more than a year ago, Gloucester, Mass., was on its way to replacing its sodium streetlights with 4000K LEDs. But then city planner Matt Coogan began reading about health and environmental warnings. He also had residents sample the 4000K lights against 3000K models.

Next month, the city is expected to finish installing its LEDs, but they will be 3000K rather than 4000K.

Coogan knows the debate over the health risks of LEDs rages on. But he doesn’t want to be on the wrong side of history.

“I didn’t want to get 10 or 15 years down the road and find out we had exposed our people to a health risk,” Coogan said.

— Stateline

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