

May 9, 2022

**BY EMAIL**

Karen Jackson, Deputy Chief Operating Officer  
Centers for Medicare and Medicaid  
karen.jackson1@cms.hhs.gov

**Re: LED Toxicity**

Dear Karen Jackson,

I learned about the CMS's role in inspecting laboratories from watching the movie *The Dropout*. CMS played a vital role in stopping the Theranos fraud by inspecting their labs. CMS may again provide a vital role in stopping another fraud, this time with LED light.

The Soft Lights Foundation has engaged with many federal agencies about the toxicity of LED light, but we have not found a single agency that understands that with the invention of LEDs there are two categories of light: point source and surface source.

**Point Source:** The light from a point source is spatially uniform. An incandescent light bulb is an example of a point source. Brightness is measured with luminous intensity in candela. Point source light is generally considered safe and high quality.

**Surface Source:** The light from a surface source is a directed beam of non-uniform energy. An LED is an example of a surface source. Brightness is measured with luminance in nits (candela per square meter). Surface source light is a low-quality, industrial grade light that is unsafe.

Because surface source LED light has non-uniform energy and atypical spectral power distributions, LED light is toxic for cellular organisms. For humans, the result of exposure to LED light can cause epileptic seizures, migraines, anxiety, panic attacks, nausea, and distorted vision. A study on milk titled [Exposure of Fluid Milk to LED Light Negatively Affects Consumer Perception and Alters Underlying Sensory Properties](#) showed that milk is chemically altered when exposed to LED light.<sup>1</sup>

Since we have not found a single federal agency that has developed regulations or procedures for surface source LED light, I am quite concerned that the Centers for Medicare and Medicaid also do not have procedures in place to guard against LED light contamination in labs and that CMS does not ensure that the labs that it inspects have protections in place to prohibit the use of LED light.

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<sup>1</sup> [https://www.journalofdairyscience.org/article/S0022-0302\(16\)30131-X/fulltext](https://www.journalofdairyscience.org/article/S0022-0302(16)30131-X/fulltext)

I would like to request an appointment for a virtual meeting with a staff member from CMS to discuss LED light and its impacts on CMS inspections.

Sincerely,

*Mark Baker*

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