



Artificial Light and Health



Light has beneficial roles when it comes to synchronising our day-night rhythm and driving our skin's natural production of vitamin D. However, the sun's rays can also burn our skin and eyes, and give rise to skin cancer.

Must we be cautious when using artificial light?

→ HOW CAN ARTIFICIAL LIGHT AFFECT US?

Our **biological clock** can be disrupted when we are awake and exposed to lamp light in the late evening, at night or in the early morning. This disruption can in turn affect sleep, digestion, and cardiovascular health, and possibly increase the risk of breast cancer. Such effects are not linked to a specific lamp type but to the ill-timed exposure to light.

Exposure to **UV radiation** can cause **skin cancer**. The lamp's glass envelopes filter out UV radiation, but low levels may get through. The intensity of household lighting is so low that exposure to potentially hazardous radiation is considered negligible. Even in the worst-case scenario of being exposed all day at the office or at school to lamps that are worse than those currently in use with relatively high radiation levels, the added UV exposure over the course of one year only amounts to that of a one-week holiday in a sunny destination. Long-term exposure to low levels of UV radiation from lamps thus adds a very small percentage to the lifetime risk of developing skin cancer.

Blue light and **UV radiation** can harm the **eye**. Exposure to the blue component of the light from the sun can harm the retina and inappropriate use of high-intensity lamps can too. Long-term exposure to UV from sunlight may affect the cornea and cause cataracts but using artificial light normally is very unlikely to have any similar effects.

→ WHAT NEEDS TO BE RESEARCHED?

More data are needed on exposure to UV and blue light from indoor lamps, and the effect of these on skin and eye diseases. Potential health effects of flicker and of ill-timed exposure to artificial light should also be investigated.

Are all lamps equally safe?

The Scientific Committee considered over 180 lamps covering all major types used for general lighting purposes, including fluorescent lamps, incandescent light bulbs, halogen lamps, and some LEDs. All of them were considered safe if used under normal conditions.

This fact sheet is based on the scientific opinion of the independent Scientific Committee on Emerging and Newly Identified Health Risks: "Health effects of artificial light" adopted on 19 March 2012.

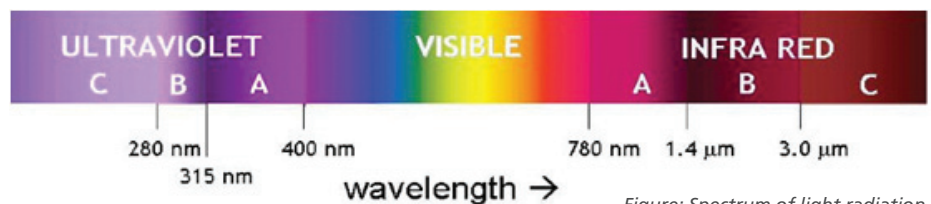


Figure: Spectrum of light radiation.

→ HOW SHOULD LIGHT-SENSITIVE INDIVIDUALS BE PROTECTED?

Some people have conditions that make them exceptionally sensitive to light. Sunlight seems to be the main trigger of disease but artificial light also plays a role in some cases. Manufacturers should give detailed information on the light emitted by

each model of lamp, so that patients and their doctors can choose the lamp that suits them best. Patients with retinal dystrophy for instance should wear special protective eyewear that filter short and intermediate wavelengths.

The detailed and nuanced view of the European Scientific Committee on Emerging and Newly Identified Health Risks on this issue is available at

http://ec.europa.eu/health/scientific_committees/emerging/docs/scenih_r_o_035.pdf



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