

LIGHT POLLUTION AS ONE OF THE CAUSES OF CIVILIZATION DISEASES. WHAT YOU NEED TO KNOW ABOUT NON-VISUAL RESPONSE TO LIGHT

Summary

At the present stage of technological growth, humans are unknowingly affected by the ever-growing influence of artificial light. The use of artificial light gives people an opportunity to be intensely active throughout a 24 hour cycle, it also brings about the flexibility of working hours and changes in lifestyle. Moreover, various devices (mobile phones, computers, TV sets etc.) based on LED technology which emit different light spectra, including lots of short-wavelength-light, are more and more often used nowadays. Using them keeps people in continuous contact with a light source, often for long periods of time.

The paper refers to the issue of how human health, including sleep quality, is influenced by daily and frequent exposition to artificial light generated

by light spectra different from the natural ones. And attempts to explain how this exposition may contribute to the light pollution. The main theme of this article is to answer the question of how light affects physiological functions around the full visible spectrum and throughout a 24 hour cycle. It is now known that short-wavelength light, having the ability to change circadian rhythms, elicits direct non-visual response and influences such physiological processes as circadian rhythm synchronization, hormones suppression (e.g. melatonin secretion), reduction of slow wave activity during sleep, genes expression, body temperature regulation. According to the latest data, short-wavelength light also enhances alertness and improves cognitive functions.