Artificial light at night disrupts cell division

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Just one "pulse" of artificial light at night disrupts circadian cell division, reveals a new study carried out by Dr. Rachel Ben-Shlomo of the University of Haifa-Oranim Department of Environmental and Evolutionary Biology along with Prof. Charalambos P. Kyriacou of the University of Leicester.

"Damage to cell division is characteristic of cancer, and it is therefore important to understand the causes of this damage," notes Dr. Ben-Shlomo. The study has been published in the journal *Cancer Genetics and Cytogenetics*.

The current research was carried out by placing lab mice into an environment where they were exposed to light for 12 hours and dark for 12 hours. During the dark hours, one group of mice was given artificial light for one hour. Changes in the expression of genes in the rodents' brain cells were then examined.

Earlier studies that Dr. Ben-Shlomo carried out found that the cells' biological clock is affected, and in the present research she revealed that the mode of cell division is also harmed and that the transcription of a large number of genes is affected. She states that it is important to note that those genes showing changes in their expression included genes that are connected to the formation of cancer as well as genes that assist in the fight against cancer. "What is certain is that the natural division is affected," Dr. Ben-Shlomo clarifies.

This research joins earlier studies from the University of Haifa on the

effects of exposure to artificial light at night.

Provided by University of Haifa