Researchers suggest living in 'eternal summer' may be adversely impacting our health

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(Phys.org)—A team of researchers at the University of Aberdeen in the U.K. has had a paper published in the journal *Proceedings of the Royal Society B*, outlining what they describe as the dangers of living in an "eternal summer." By artificially changing the environment we live in, they argue, we may be working against health related bodily systems that

have evolved over many years to protect us from dangers unique to each season.

Scientists have known for some time that we humans are sensitive to seasonal variations—it is in our genes, roughly a quarter of them by recent estimates. Yet we continue to live our lives in heated homes filled with light, long into short winter days that simulate summer conditions. What impact does this have on our bodies? No one really knows, but the researchers with this new effort believe that there is an impact, and it is not good.

As the researchers point out, our bodies have been programmed to adapt regularly to seasonal changes—important genes have evolved to the nudge the production of proteins, for example, that normally would be responsible for helping ward off ailments such as the flu. Instead, we fool our bodies into thinking it is summer all the time, and thus leave ourselves vulnerable. They also point out that we are also artificially protecting ourselves against global warming—as it grows warmer outside, all we have to do is keep the thermostat at the level we like. But, doing so could be dangerous, they suggest, because it is leading to a disconnect with the reality of what is going on outside of our homes and places of business.

In their paper, the researchers offer a variety of scenarios surrounding seasonal disruption, highlighting what they believe are key areas of concern—all from a variety of viewpoints which include an overall environmental perspective, one focused on agricultural and others focused on anthropological, veterinary or biomedical standpoints—with each circling around the de-synchronization of our internal biology and the real environment outside of our virtual existences. They point out that each topic should be an area of study and that taken together they could all form the basis of a framework for trans-disciplinary research that could ultimately reveal the true impact of us humans living in

artificial environments.

More information: Disrupted seasonal biology impacts health, food security and ecosystems Published 14 October 2015.DOI: 10.1098/rspb.2015.1453

Abstract
The rhythm of life on earth is shaped by seasonal changes in the environment. Plants and animals show profound annual cycles in physiology, health, morphology, behaviour and demography in response to environmental cues. Seasonal biology impacts ecosystems and agriculture, with consequences for humans and biodiversity. Human populations show robust annual rhythms in health and well-being, and the birth month can have lasting effects that persist throughout life. This review emphasizes the need for a better understanding of seasonal biology against the backdrop of its rapidly progressing disruption through climate change, human lifestyles and other anthropogenic impact. Climate change is modifying annual rhythms to which numerous organisms have adapted, with potential consequences for industries relating to health, ecosystems and food security. Disconcertingly, human lifestyles under artificial conditions of eternal summer provide the most extreme example for disconnect from natural seasons, making humans vulnerable to increased morbidity and mortality. In this review, we introduce scenarios of seasonal disruption, highlight key aspects of seasonal biology and summarize from biomedical, anthropological, veterinary, agricultural and environmental perspectives the recent evidence for seasonal desynchronization between environmental factors and internal rhythms. Because annual rhythms are pervasive across biological systems, they provide a common framework for trans-disciplinary research.

Press release