Netflixing Before Bed, a Breast Cancer Disaster?

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Before mechanical clocks were invented, humans only had the sun as a guide for the passing of time throughout the day. Through our evolution, it is instilled within us to use the sun as a clock, waking up when the sun peaks its head over the horizon and going to sleep after the sun sets. Nowadays even though we can look down at our phones, rather than up towards the sky, to determine the precise time, our biological functions still remain tied to the position of the sun in the sky through our bodies internal clock called the circadian rhythm. Psychology Today explains that our circadian rhythm controls many aspects of our lives including our sleep/wake cycle, hunger, and has some influence on nearly every bodily function.

Our body's delicate clock is tied to outside stimuli such as ambient light levels which allows us to know that it's daytime when it's bright and sunny. However, in our modern age with cities dotted with powerful streetlights and homes with dazzling LEDs, we are constantly exposed to high levels of light even at night. In addition to this, I think all of us are guilty of staring at our bright phone screens before bed! These sources of Artificial Light at Night (ALAN) can trick our bodies into believing that it is noon it's actually midnight, and in response alter the many biological pathways which are connected to our circadian rhythm. Previous research has found ALAN to reduce our bodies production of melatonin which can alter sleep patterns and even increase feelings of stress and anxiety. Today, shocking new research led by Harvard researcher Peter James has connected ALAN to an increased risk of breast cancer.

In his study, James tracked the lives of 109,672 women from 1989 to 2013, collecting data about their residences, age, medical history, and much more. In addition, James looked

towards the National Oceanic and Atmospheric Administration (NOAA) database on annual outdoor LAN levels in different geographic regions taken from satellites. With these two datasets, James and his team were able to determine the ALAN exposure levels each woman received using their mailing addresses. Afterwards, James reviewed their medical records and identified over 3500 cases of breast cancer. Adjusting for factors such as income, race, and more, the team found a link between breast cancer and ALAN for women who were premenopausal at the time of a case. In addition, they found an even stronger correlation in the cohort of women who smoked. James hypothesizes that the ALAN's suppression of melatonin, acting through the body's estrogen signaling pathways, is the culprit that results in increased breast cancer risk.

With breast cancer being the most common cancer for women in the US, it begs us to take a moment and think about what we can actively do in our own lives to minimize our risk of breast cancer. Currently, many risk factors such as obesity, alcoholism, and an unhealthy diet are already known to be able to lower the risk of breast cancer according to the Mayo Clinic. As new research comes out, we can be better educated about what to do and what to avoid. With ALAN being connected to breast cancer risk, perhaps we should think twice before we stay up all night watching Netflix and instead choose to take a walk outside below the beautiful dark skies.

References

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