

CORONAVIRUS ADVICE: Boosting Your Immune System with Light & Circadian Rhythms

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As cities and countries initiate shelter in place orders to flatten the coronavirus curve, and people are forbidden to walk in public parks or open spaces, we are forgetting the second key intervention that can reduce your coronavirus risk:

Boosting your immune system.

A strong immune system minimizes the viral impact on your health and that may be just as important as reducing the risk of infection by social distancing and washing your hands.

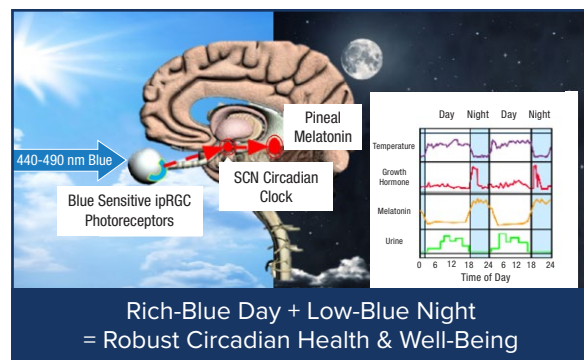
If the social distancing defense fails, your immune system stands between you the coronavirus. It can turn a potentially serious, even fatal, illness into a minor inconvenience.

How do you boost your immune system?

One surefire way is to maintain a robust circadian clock.

Our circadian clock controls the timing of hundreds of biological processes in our bodies. When your circadian rhythms are strong and tightly synchronized, you sleep better at night, feel more alert during the day and your immune system is fully equipped for the fight.

But when the circadian clock is disrupted our immune defenses against viruses and bacteria are impaired. A 2016 study from the *University of Cambridge*, England reported that knocking out BMal1, the key circadian clock gene, triples the rate of virus replication in animal studies.



So how do we strengthen the circadian clock and our immunity?

A simple way is to entrain your circadian rhythms by managing your light exposure, especially to blue-rich light sources like the sun or LED lights. Humans need blue light during the day, but the average person spends 93% of our daytime indoors away from natural light, while getting too much blue-rich electric light after the sun sets. This unbalanced exposure to blue light is disrupting and suppressing our natural circadian cycles, and lowering our immunity.



While scientists are not certain why younger people are less severely impacted by the coronavirus, it may be because they spend more time outdoors and have stronger circadian cycles. In contrast, elderly populations living primarily indoors often have inadequate lighting to maintain strong circadian rhythms.

Our front line 24/7 workers, including healthcare personnel and first responders, are the greatest casualties of circadian disruption. The *World Health Organization*, *American Medical Association* and the *National Institutes of Health* have recognized the devastating impact of blue-rich LED and fluorescent light at night on obesity, diabetes, and breast cancer and other hormone-sensitive cancers.

But, today when we are facing more and more new viral infections, we also need to be aware of the impact of light that is rich in 440-490nm blue at night on circadian disruption that compromises our immunity.

No wonder controlling light exposure for “True Circadian Health” has been recognized as the #1 2020 Global Wellness Trend <https://www.globalwellnesssummit.com/2020-global-wellness-trends/circadian-health/>

So the best advice is to get outside in the bright, blue-rich daylight during the morning hours when light re-synchronizes the circadian clock. If you cannot venture outdoors, try to spend as much time as possible by a window, or on the balcony if you have one. It is equally as important to avoid being disrupted by bright blue-rich light from LED and fluorescent lighting and electronic screens between sunset and sunrise.



Not only will an hour of daily exercise in the fresh air and sunlight help boost your immune system, it can lift your mood and reduce your stress. You may not be able to hug your neighbors but you can easily make eye contact from 12 feet away.

Social distancing doesn't have to equate to social disconnecting, or missing out on the protective power of light.

Dr. Martin Moore-Ede led the team at Harvard Medical School that located the human biological clock. Recently his team at the Circadian Light Research Center identified the 440-490nm blue wavelengths that disrupt circadian rhythms at night, and has pioneered the use of spectrally engineered blue-rich day and blue-depleted night LED lights to protect health and performance.

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