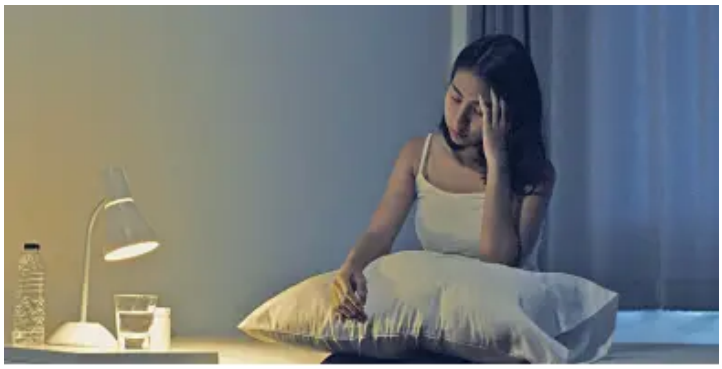
- Lighting

NIGHT LIGHT EXPOSURE, SLEEP DEPRIVATION LINKED TO CARDIOVASCULAR DISEASES–EXPERT

BusinessMirror · 26 Feb 2026 · C5 · By Rory Visco | Contributor

HEART disease remains one of the leading health concerns among Filipinos, and while diet, exercise, and genetics often take center stage, sleep is increasingly part of the conversation.



According to Dr. Jimmy Chang, otolaryngologist, head and neck surgeon, and president of the Philippine Society of Sleep Medicine (PSSM), understanding how light affects the body clock is an important step toward protecting long-term health.

"Using your phone at night will not automatically cause heart disease," Dr. Chang said in an email interview with Businessmirror. "But chronic circadian disruption and poor sleep can gradually increase cardiovascular risk. Small nightly habits, repeated over years, do add up."

Emerging research suggests that disrupted sleep and chronic circadian misalignment—when the body's internal clock falls out of step with the natural day-light cycle due to shifting work, irregular sleep schedules or "social jet lag," or exposure to light at the wrong times—may quietly contribute to cardiovascular risk. One surprising factor woven into modern routines? The glow of screens long after sunset.

Large population studies have linked nighttime light exposure, which suppresses melatonin, to higher rates of coronary artery disease, myocardial infarction, and stroke, independent of traditional risk factors. The relationship is not direct or immediate, but still meaningful. Reduced melatonin and chronic sleep deprivation are associated with inflammation, autonomic imbalance, and metabolic dysfunction, factors that influence heart health.

How blue light talks to the brain

INSIDE the eyes are specialized cells called intrinsically photosensitive retinal ganglion cells (iprgcs). Unlike rods and cones that allow humans to see images, these cells detect blue light, particularly wavelengths of around 460 to 480 nanometers, and send signals directly to the brain's master clock, the suprachiasmatic nucleus.

When exposed to blue light in the evening, the brain interprets it as daytime. The result: suppression of melatonin, the hormone released by the pineal gland that signals it is time to sleep.

"Melatonin is not just a sleep hormone. It's also part of a larger biological rhythm that influences blood pressure patterns, heart rate variability, and metabolic processes," Dr. Chang explains.

Laboratory studies consistently show that evening exposure to blue light suppresses melatonin and delays its onset. Suppression can begin within minutes, where some research suggests as little as five. Even brief screen use close to bedtime may delay sleep onset by 30 to 60 minutes, depending on brightness, duration, and timing.

This repeated nightly exposure can shift the body clock later, and create what experts sometimes refer to as “digital jet lag.”

Why nighttime exposure is different

DAYTIME light—including blue light—is not the villain. In fact, morning and afternoon light exposure strengthens the circadian rhythm, supports alertness, and promotes better sleep at night.

The problem arises when bright, blueenriched light appears at a time when the body expects darkness.

“Nighttime screen exposure is more disruptive because it sends a conflicting signal,” Dr. Chang emphasized. “Your internal clock is preparing for rest, but the light tells your brain to stay awake.”

Research consistently links screen use in the hour before bedtime to later sleep times, shorter sleep duration, poorer sleep quality, longer time needed to fall asleep, and increased morning grogginess. Engaging content, whether work emails or streaming dramas, further heightens alertness.

Protection isn’t just about turning on “night mode.” Warmer screen tones can reduce melatonin suppression, but they do not fully eliminate it. Brightness, duration, distance from the eyes, and mental stimulation all contribute to the overall effect.

“It’s not just the color of the light,” Dr. Chang notes. “It’s how bright it is, how long you’re exposed, and how stimulating the activity is.”

The sleep–heart pathway

THE connection between sleep and heart health is complex but well documented. Sleep deprivation has been strongly associated with hypertension, coronary artery disease, and stroke. Irregular sleep patterns may disrupt normal nighttime dipping of blood pressure, a protective physiological process.

Reduced melatonin, whether from light at night or erratic schedules, is associated with cardiovascular risk pathways. Melatonin itself appears to have cardioprotective properties, although its effects depend on context, dosage, and underlying health conditions.

“We see that people who consistently get insufficient or poor-quality sleep often develop other risk factors like higher blood pressure, weight gain, impaired glucose metabolism,” Dr. Chang enumerates. “Sleep is not separate from heart health. It’s deeply connected.”

Still, he stresses that the message is not meant to alarm.

“This is about awareness, not fear. We’re talking about cumulative effects over time, and that means we can also make cumulative positive changes.”

Small adjustments, meaningful gains

FOR many Filipinos, screens are essential tools for work, communication, and relaxation. The goal is not elimination but thoughtful timing.

Dr. Chang recommends establishing a “digital wind-down” period of about 30 minutes to an hour before bedtime. Lowering screen brightness, increasing ambient room lighting earlier in the evening, and keeping devices at a greater distance from the face may help reduce impact. Choosing less stimulating content can also ease the transition to sleep.

Equally important are consistent sleep schedules and exposure to natural light in the morning. “Our bodies are designed for rhythm—light in the morning, darkness at night,” Dr. Chang says. “When we align with that rhythm, sleep becomes more restorative.”

In a world that rarely powers down, reclaiming the night may be one of the simplest acts of preventive health. Protecting the heart does not always begin in the gym or the kitchen. Sometimes, it starts with something far quieter: dimming the lights, setting the phone aside, and allowing the body’s natural clock to do its work.