CENTRE FOR SLEEP™ & HUMAN PERFORMANCE
the science of sleep ...for the art of living.
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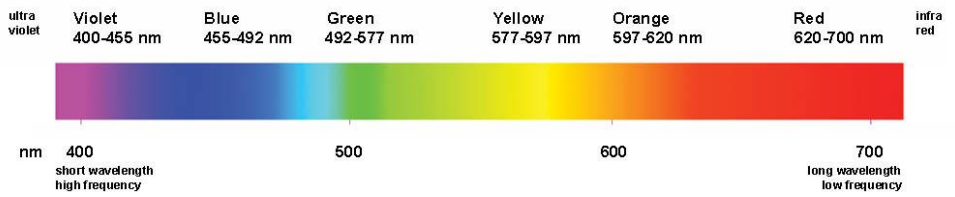
EFFECTS OF NIGHTIME LIGHT AND BLUE LIGHT

In humans, our circadian internal biological clock helps regulate our sleep phases throughout the night in the presence of natural darkness and increased melatonin production in our body. Melatonin acts as a natural signal and it is the main factor to "open the sleep gate" where we fall asleep easily at night.

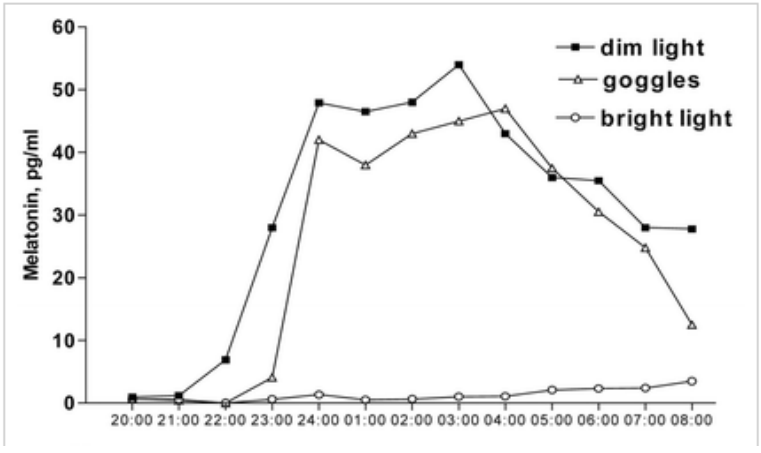
- **Nighttime environmental light** can reduce and delay our natural rhythm of melatonin secretion. Evening light exposure including normal overhead room lighting, eBooks and computer screens negatively impact sleep.
- **Blue light** sends a signal to our brain to wake up! This "alerting effect" can make it harder to fall asleep, wake you up in the middle of the night and reduce REM "dream sleep".
- **Technology** can also be addictive and interfere with sleep time; checking emails at night can create worry and stress.



How to Decrease Nighttime Blue Light Exposure

- Light restriction before bedtime improves our subjective quality of sleep and increases our alertness the next morning. It also helps advance the onset of melatonin secretion which helps us fall asleep earlier in the evening. This strategy can help "evening owls" to better cope with an early morning work and social schedule.
- Blue light blocking glasses reduce blue light exposure to your eyes. The warmest setting = more red light and less violet light. It is important to note that the "dim mode" on our computers and phones has yet to be scientifically proven to be efficient against blue light.
- Wear blue light blocking glasses or make sure the lighting in your home is dim (avoid overhead lighting) at least 2 hours before bedtime. Do not drive wearing blue blocking glasses if it feels unsafe.

Kayumov et al., 2005, J Clin Endocrinol Metab



Recommended Blue Light Blocking Glass Brands

- **Blueblockglasses.com**: Somnitude blocks 99%; both original and styles which fit over prescription glasses.
- **Spektrumglasses.com:** blocks 50%-99%; available as a prescription lens
- **RA optics.com and Ocushield:** prescription blue blockers

Apps Which Reduce Blue Light Screen Exposure/ Eye strain

- **Lowbluelights.com**
- **Android:** twilight app-F.lux technology; colour temp 1000k
- **Apple:** night shift mode on warmest setting