

How Does Blue Light & Other Light Affect Your Sleep? | Dr. Andrew Huberman

So now let's talk about what I'm calling critical period three of each 24 hour cycle So this would be the period of time of late evening So it might be 6 p.m. for some depending on when you go to sleep or 7 p.m. extending into the hours in which you decide to get into bed and go to sleep And then throughout the night there are a number of things that you're going to want to do and there are a number of things that you are going to want to avoid doing in order to optimize your sleep First of all you're going to want to avoid bright artificial lights of any color Yes of any color We haven't talked a lot about blue blockers you know lenses that block blue wavelengths or short wavelengths of light I don't have anything against blue blockers In fact many people find that blue blockers provide them some relief from headache and some eye strain if they wear blue blockers throughout the day and certainly at night but you don't need them And even if you do wear them you will find that if lights are very bright doesn't matter if it's a blue light a yellow light or a red light those bright lights will wake up your brain and body they will activate the same mechanisms that were activated early in the day by sunlight However and here's the really diabolical twist I mentioned this earlier But the diabolical twist in the way that your brain and body respond to light is that early in the day in the morning hours you need a lot of bright light ideally from sunlight to be very alert and to wake up But in the evening hours and nighttime hours it takes very little light very few photons in order to wake up your brain and body and to disrupt your circadian clock and disrupt your sleep So what that means is that once the sun goes down which of course is going to happen at different times of year in different places on earth But once the sun goes down you would be wise to try and dim the lights in your indoor environment most days Right I realize some nights you're gonna throw a party and have people over You might not want to dim the lights Some nights you're gonna go out you might view a lot of bright lights But most nights of your life you're going to want to dim the lights in your internal environment And ideally the lights that you do use you would place low in that physical environment So you would try and not use overhead lights but rather rely on desk lamps or lights even place low to the floor even on the floor If you are going to use light at night And most people do I would encourage you to use as little artificial light as is required to carry out

the activities you need to require safely That could be studying In which case you might need a little bit more light in order to read or study If you're watching a television show or you're watching something on your computer dim that screen way way down as dim as possible While still of course being able to view what you need to view even better I should say ideally you would use candlelight and or moonlight Now some nights the moon is really bright and you actually can use moonlight to go about your usual activities Moonlight might seem very very bright but actually moonlight is fairly low light intensity and candlelight which can also seem very bright actually is very low light intensity if you're sitting across a table with some candlelight there and it's a really bright candle Chances are it's only about 3 to 10 lux which is very very little light energy compared to say an artificial desk lamp or an overhead light which is going to be in the area of anywhere from 100 to 1000 lux So candlelight is fine of course be cautious with open flame but candlelight is fine moonlight is fine Dimming artificial lights is fine provided they're dimmed way way down and again try and avoid using overhead artificial lights The absolute worst lights are going to be overhead fluorescent lights of the sort that you would have in the supermarket or uh that you would see at a gas station or something of that sort And I confess there are times in which I'm you know driving home and it's late at night and I wanna be able to get to sleep and I'll need to stop at the grocery store or a gas station or something like that I've actually put on sunglasses at night in order to avoid getting that bright light exposure at night Although that's a little bit extreme Uh I have done that from time to time because that bright light exposure will absolutely quash It would eliminate any Melatonin that happens to be circulating in your brain and body Now Melatonin a lot of people think of as a supplement but melatonin is naturally released as the evening comes about and into the nighttime hours it's a hormone that makes you feel sleepy and allows you to fall asleep So viewing bright light in the late evening hours and nighttime hours is really not good for your sleep quality and your ability to fall and stay asleep So for most people a simple rule of thumb is going to be avoid bright artificial lights of all colors and in particular overhead bright artificial lights between the hours of 10 p.m. and 4 a.m. That's right between 10 p.m. and 4 a.m. Avoid those bright artificial lights as much as possible Use only as much light as is absolutely necessary In order to carry out the routines and activities you need to carry out safely I should mention that the reason overhead lights are problematic is the same reason why sunlight is so great early in the day which is that the cells that is

the neurons that can wake up your brain and body through activation of the circadian clock reside mainly in the bottom half or two thirds of your neural retina And the way the optics of your eyes work is that the cells on the bottom half of your eye view the upper visual field So this is a beautiful adaptive mechanism that allows these cells to respond to overhead light from sunlight in the early part of the day and throughout the day But in the evening if you have bright artificial lights on and those bright artificial lights are overhead lights it's going to more closely mimic what sunlight does in the evening time And that turns out to be a bad thing if your goal is to eventually go to sleep So again do like the Scandinavians do use lights that are set low in the room at night And if you really want to optimize your sleep wake cycles I suppose you could also do the opposite throughout the day You could really emphasize the use of bright artificial lights and sunlight that comes from above And of course sunlight always comes from above But if you're working in a given you know office environment and you know it's two pm or three pm and you want to be as awake as possible really crank up the overhead lights and then in the evening which is this critical period three that we're referring to really try and dim those lights or have them off or just rely on candlelight or moonlight from the hours of about 10 pm until 4 a.m. Our good friend Samra Hattar who's been on this podcast before Samra is director of the Chronobiology Unit at the National Institutes of Mental Health Well he's absolutely obsessive about this light stuff and avoiding light at night In fact he lives in what I sort of joke is like a cave at night from 9 p.m. until 5 a.m. which is really his um kind of sleep cycle He has his house so dark that you'd be lucky to be able to find a spoon in the kitchen In fact you'd be lucky to find your way down the hallway if you're me But in any case dim the lights from them way way down it will serve you Well it will make it much easier for you to get sleepy and stay sleepy and fall asleep and stay asleep throughout the night