

Why We Sleep

Unlocking the Power of Sleep and Dreams

Matthew Walker, PhD
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Too Little Sleep:

- Demolishes your immune system, doubling one's risk of cancer
- Increases Alzheimer's disease
- Disrupts blood sugar creating pre-diabetes
- Damages arteries, increasing blood pressure and the risks of heart attack and stroke
- Contributes to all major psychiatric conditions: depression/anxiety/suicide
- Makes you hungry, resulting in overeating and obesity
- Impairs fertility for men and women
- Causes hundreds of thousands of traffic accidents yearly exceeding alcohol and drug caused accidents combined
- Impairs our ability to learn, memorize, make logical decisions and choices
- Harms our ability to modify (inhibit) painful memories (PTSD)
- Inhibits creativity and reduces problem solving abilities
- Shortens telomeres and therefore both the quantity and quality of life

"The shorter your sleep, the shorter the life span."

- Sleep loss is epidemic and the greatest public health challenge we face
- Every organ in the body and every process in the brain are enhanced with sleep
- "Poor sleep is the most underappreciated factors contributing to cognitive and mental ill health in the elderly, including issues of diabetes, depression, chronic pain, stroke, cardiovascular disease, and Alzheimer's disease."
- **"Sleep is the single most effective thing we can do to reset our brain and body health each day."**

Sleep Rules **The Key is Melatonin**

- Use bright light, especially sunlight, during the day
- Stick to a sleep schedule, same time to bed and to arise
- Eight hours nightly is non-negotiable; no late-night sleep procrastination
- Do not exercise 2-3 hours before bedtime
- No caffeine 8 hours before bedtime
- Nicotine interferes with sleep (smoking)
- Avoid alcohol after dinner/before bed
- No napping after 3PM
- Cool bedroom
- Take a hot bath before bed
- Reduce bright light exposure after dark, especially blue emitting LEDs
- Dark bedroom, no light; even the smallest level of light at night impairs melatonin production
- No gadgets, especially those with electronic blue light 1-2 hours before bed
- Do not lie awake in bed

Zapped From Infrared to X-rays, the Curious History of Invisible Light **Bob Berman, 2017**

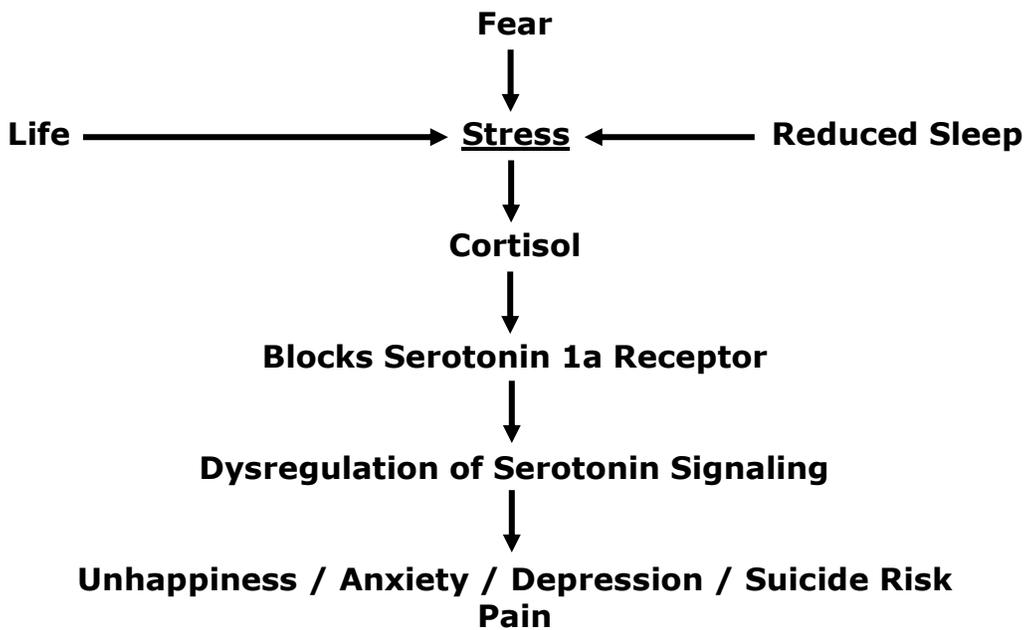
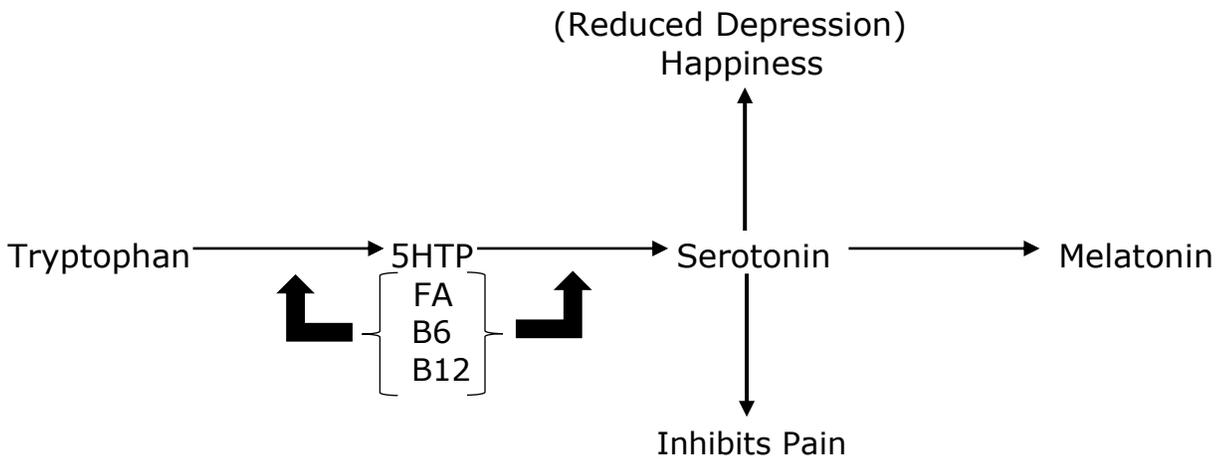
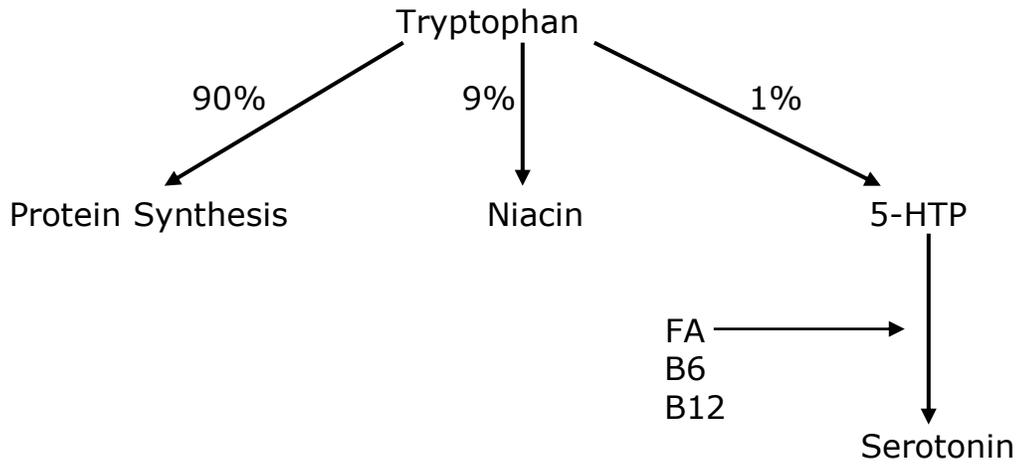
"Our bodies need to be shielded from the electromagnetic spectrum, including rays emitted by indoor light."

"Here we come to an astonishing medical revelation: the single surest cause of breast cancer is—lack of darkness!" p. 67

"Increasing exposure to light, especially bright indoor lights, at times outside of normal daylight hours, decreases secretion of melatonin, which can increase the risk of breast cancer."

"The greater the secretion of melatonin, the lower the risk of breast cancer."

"In other words, we need darkness." p. 68



The suprachiasmatic nucleus is our 24-hour circadian rhythm biological clock. It samples light that is being sent from each eye to the brain for visual processing.

The suprachiasmatic nucleus controls when you want to be awake and when you want to be asleep.

The suprachiasmatic nucleus signals the pineal gland to make melatonin. Melatonin then starts the event of sleep. "Evening light suppresses the normal rise in melatonin."

- As a consequence of evolution from the blue ocean, retinal receptors are most sensitive to blue [400-470 nm] light.
- Dusk (naturally reduced exposure to light) reduces retinal excitation.
- Reduced retinal excitation inhibits activity in the suprachiasmatic nucleus.
- Reduced suprachiasmatic nucleus excitation reduces the pineal gland production of melatonin.

"Electric light put an end to this natural order of things." "Artificial evening light will fool your suprachiasmatic nucleus into believing that sun has not yet set." This is a physiological lie; it puts the brakes on melatonin production. "By delaying the release of melatonin, artificial evening light makes it considerably less likely that you'll be able to fall asleep."

Ambient incandescent lighting can suppress melatonin production by 50%.

Blue light emitting diodes (Nobel Prize 2014) use considerably lower levels of energy and longer life spans, "but they may be inadvertently shortening our own."

"Evening blue LED light has twice the harmful impact on nighttime melatonin suppression than warm, yellow light from old incandescent bulbs."

Use of portable electronic devices sixty minutes or less before bedtime "has a very real impact on your melatonin release, and thus ability to time the onset of sleep" [and elevated cancer risk].

"Compared to reading a printed book, reading on an iPad suppressed melatonin release by over 50 percent at night."

"Young children using electronic tablets at every opportunity throughout the day...and evening." "Such technology is enriching their eyes and brains with powerful blue light that has a damaging effect on sleep—the sleep that young developing brains so desperately need in order to flourish."