

SLEEP & LIGHT AT NIGHT THE CONNECTION TO BREAST CANCER

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LIGHT AT NIGHT

Suppresses the production of Melatonin; Interrupts sleep & normal circadian rhythms

- Evidence is accumulating that light at night, and the consequent decrease in melatonin, may be a major driver of breast cancer."
--- Cancer Epidemiologist Dr. Richard Stevens
- With constant light, tumors grow 7 times faster. At night cancer cells go to sleep
- Melatonin is now being studied as a way to prevent and treat breast and other cancers.
- "Nighttime melatonin is a relevant anticancer signal to human breast cancers. Ninety % of human breast cancers have specific receptors for this signal."

A good night's sleep may be one weapon in the fight against cancer—

- Women who sleep less than six hours a night could be raising the risk of breast cancer by more than 60%, according to research.
- Researchers believe that the natural sleep/wake pattern for humans is the one most in tune with our inherent Circadian rhythms. The natural Circadian rhythm consists of daytime exposure to intense sunlight alternating with night-times of near total darkness.
- This sleep-wake cycle is important for the production of melatonin, a hormone which acts as an internal biological clock regulating body temperature, endocrine functions, and a number of disease processes including heart attack, stroke, asthma and cancer. This may explain why nurses who often work the night shift have high rates of breast and colon cancer.

How much sleep do adults need?

A. 7 - 9 hours of sleep per night

A. Different people need different amounts to feel rested

- Trend in our nation over the last 100 years suggests people are increasingly sleep deprived
 - Example: 1910, average person slept 9 hours
 - Example: By 1975, average person slept 7.5 hours
 - Example: In 2002, the Sleep in America poll (conducted by NSF) indicated that the average American adult only sleeps 6.9 hours a night.

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“Insomnia is very common. Try not to lose any sleep over it.”

The Impact Of Light At Night —

- **Light at night has become a major environmental pollutant** disrupting the natural sleep/wake pattern and having great impact on hormone balance.
- The natural (Circadian) rhythm consists of daytime exposure to intense sunlight alternating with night-times of near total darkness.
- Evidence shows a link between low levels of the tumor-fighting hormone melatonin and cancer, especially breast, ovarian and prostate cancer.
- Exposing the eyes to light at night when melatonin is normally flowing stops its production *even* from a night light. (*see www.lowbluelights.com*)

The Impact of Light at Night, con't

- The energy efficient compact fluorescent bulbs are more melatonin suppressive than incandescent bulbs. They disrupt our circadian rhythms and studies have shown negative health effects from minor annoyances such as headaches, eyestrain, fatigue, and weight gain, to serious effects such as insomnia, sleep disturbances, an increased risk of cancer, and a suppressed immune system.
- **Remain In Darkness For The Entire Night:** Watching TV, sitting in front of computer screens, reading with artificial light, or sleeping with a light on can contribute to melatonin deficiency.

Electro Magnetic Radiation (EMR) and Hormone Suppression

- **The Effect Of EMR Doses Is Stronger At Lower Levels** — Sleeping in a room in which we are surrounded by all our favorite devices like cordless or cell phones, digital clocks, CD/radio players, computers and televisions can disrupt our hormone balance and suppress our nightly melatonin production.
- Generally, 3-5 feet away from most household magnetic fields is a safe distance from their effects. Most new appliances like TVs, microwaves, and computers re shielded, which drops the strength of the fields even further. Older model toasters, cell phones or cordless phones may have a high level of electromagnetic radiation. If we sleep next to a cordless phone base station, and/or digital lock, or we have faulty electrical wiring, enough EMR exposures are emitted to suppress night time melatonin production.
- Cell phones should NEVER be carried next to the body.

What are the detrimental effects of sleep deprivation?

- 1. Impaired glucose tolerance.** Without sleep, the central nervous system becomes more active, something that inhibits the pancreas from producing adequate insulin, the hormone the body needs to digest glucose. A study of healthy young men with no risk factors, went into a pre diabetic state after one week of sleep deprivation.
- 2. Possible link to obesity.** Growth hormone (GH) is secreted during the first round of deep sleep. As both men and women age, they naturally spend less time in deep sleep, which lowers GH secretion. Lack of sleep at a younger age, however, could drive down GH prematurely, accelerating as a result the fat-gaining process. Research indicates a lowering of the hormone testosterone as something that would also make the gaining of fat and the loss of muscle an easy thing for the body to do.
- 3. Increased carbohydrate cravings.** Sleep deprivation negatively affects the production of a hormone called Leptin. This hormone is responsible for telling the body when it is full. However, with decreased production of this hormone, your body will crave calories (especially in the forms of carbs) even though its requirements have been met.

What are the detrimental effects of sleep deprivation? con't

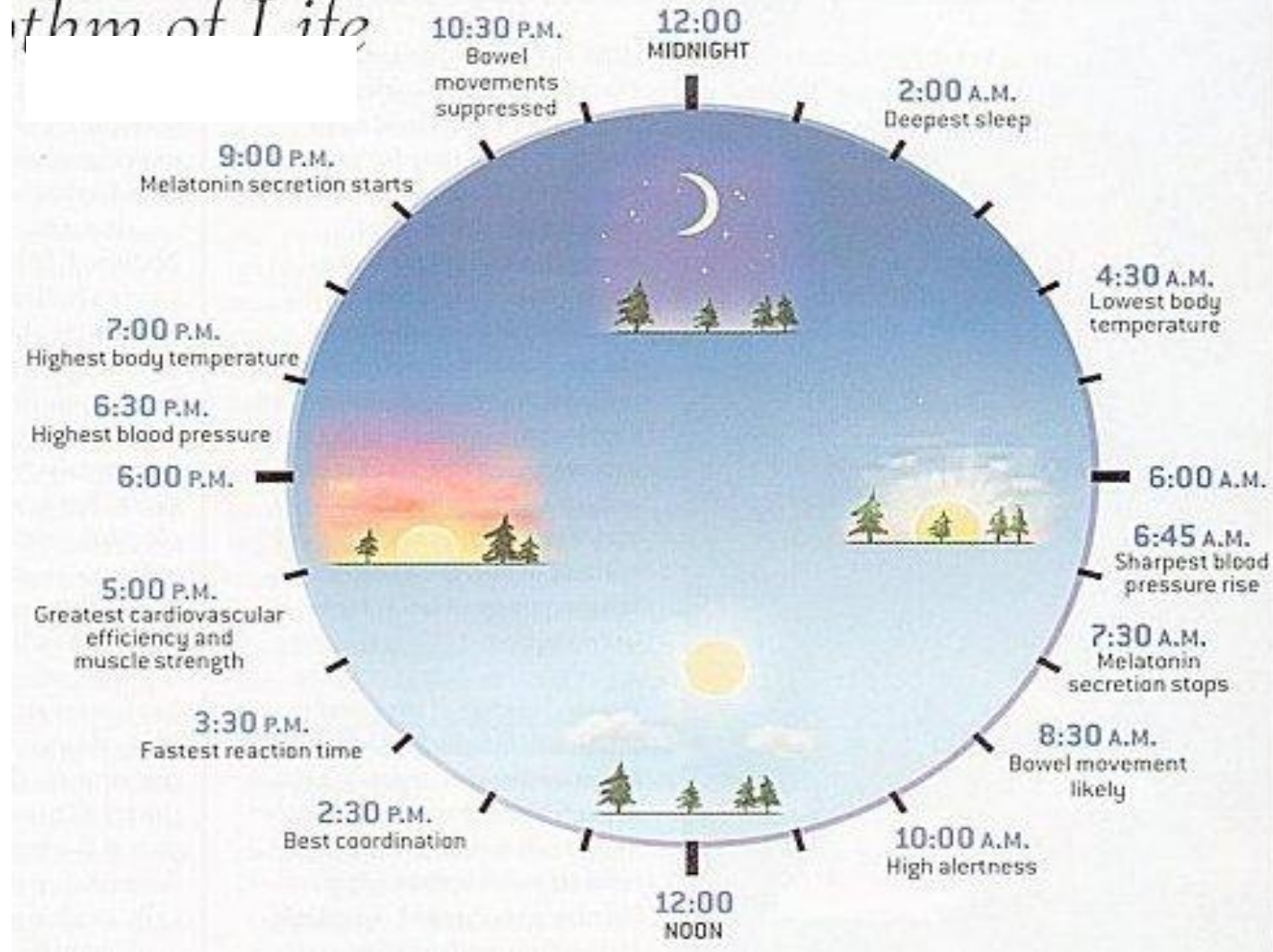
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4. Weakened immune system. Research indicates that sleep deprivation affects adversely the white blood cell count in humans as well as the body's ability to fight infections.

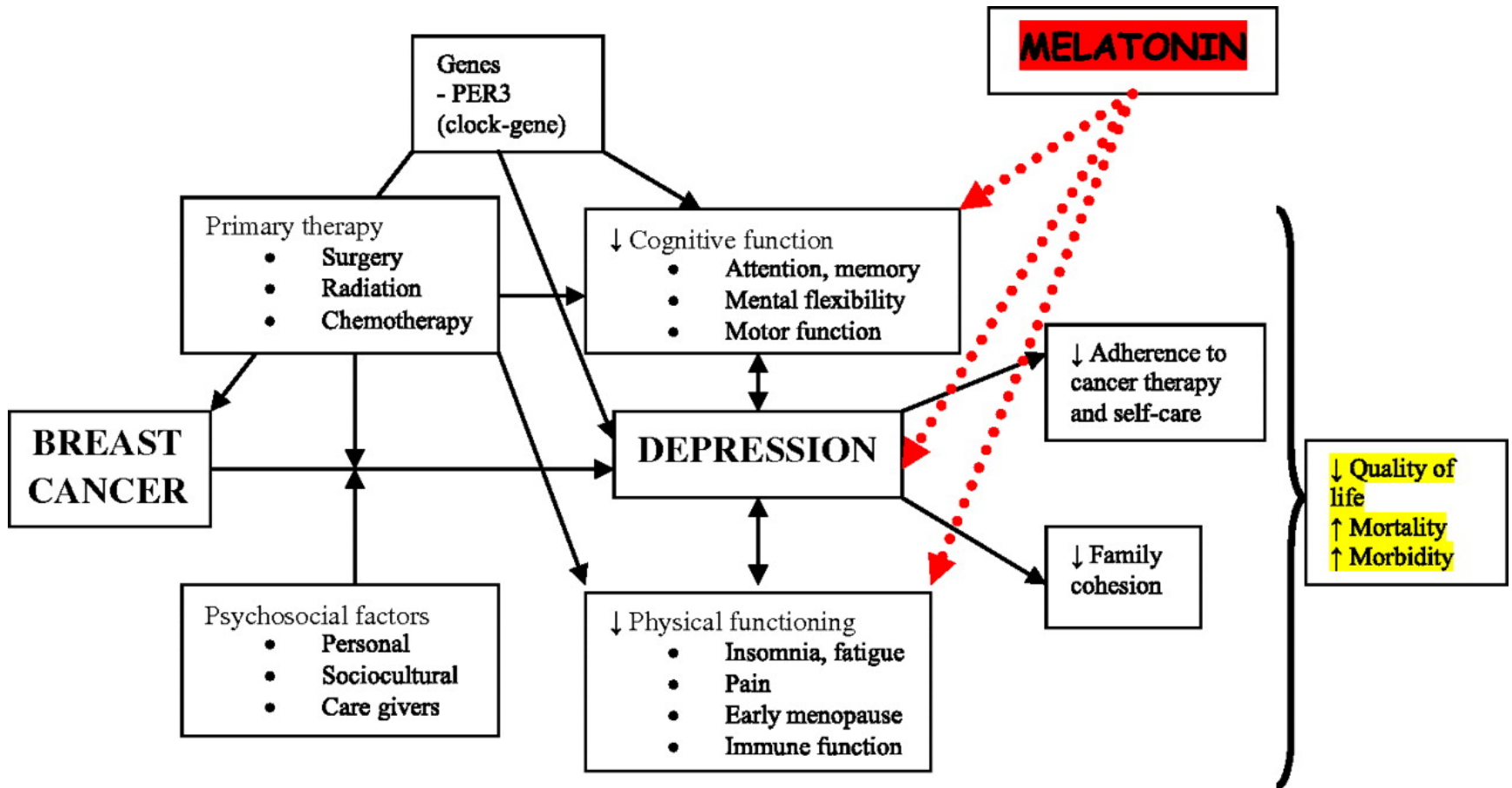
5. Increased risk of getting breast cancer. There might be a connection between breast cancer and hormone cycles disrupted by late-night light. Melatonin, primarily secreted at night, may trigger a reduction in the body's production of estrogen. But light interferes with melatonin release (since melatonin is secreted in response to a lack of light), allowing estrogen levels to rise. Too much estrogen is known to promote the growth of breast cancers.

Rhythm of LIFE

Rhythm of Life



MELATONIN



The Melatonin Hypothesis

- Exposure to Light at night or MFs suppresses nocturnal melatonin leading to increased risk of breast cancer
- Has much support for visible light: evidence that female night shift workers have elevated breast cancer risk
- Women's blood containing normal physiological concentrations of nocturnal melatonin prevents growth of MCF-7 breast tumours transplanted into rats (Blask *et al.* 2005)
- MFs and breast cancer risk controversial But, populations exposed to neighbourhood EMFs shown melatonin disruption
- For EMFs, the Melatonin Hypothesis has been extended to Childhood Leukemia – melatonin is highly protective of oxidative damage to the human hemopoietic system and to the fetus in animals

Some suggestions to get good nights sleep

- * Make sure your room is quiet and dark.
- * Sleep at least 3-5 feet away from outlets and unplug devices.
- * If possible, complete work during the day; sleep at night.
- * Get up and go to bed at the same time every day.
- * Avoid light at night as much as you can. If you need a nightlight to go to the bathroom, use a red bulb which won't suppress melatonin.
- * Exercise regularly. Exercise done early in the day may promote better quality sleep while vigorous exercise just before bedtime may delay sleep.
- * Boost melatonin levels naturally by sleeping in complete darkness at night and getting exposure to bright light during the daytime, preferably in the morning, so your body gets a clear signal that it's daytime.