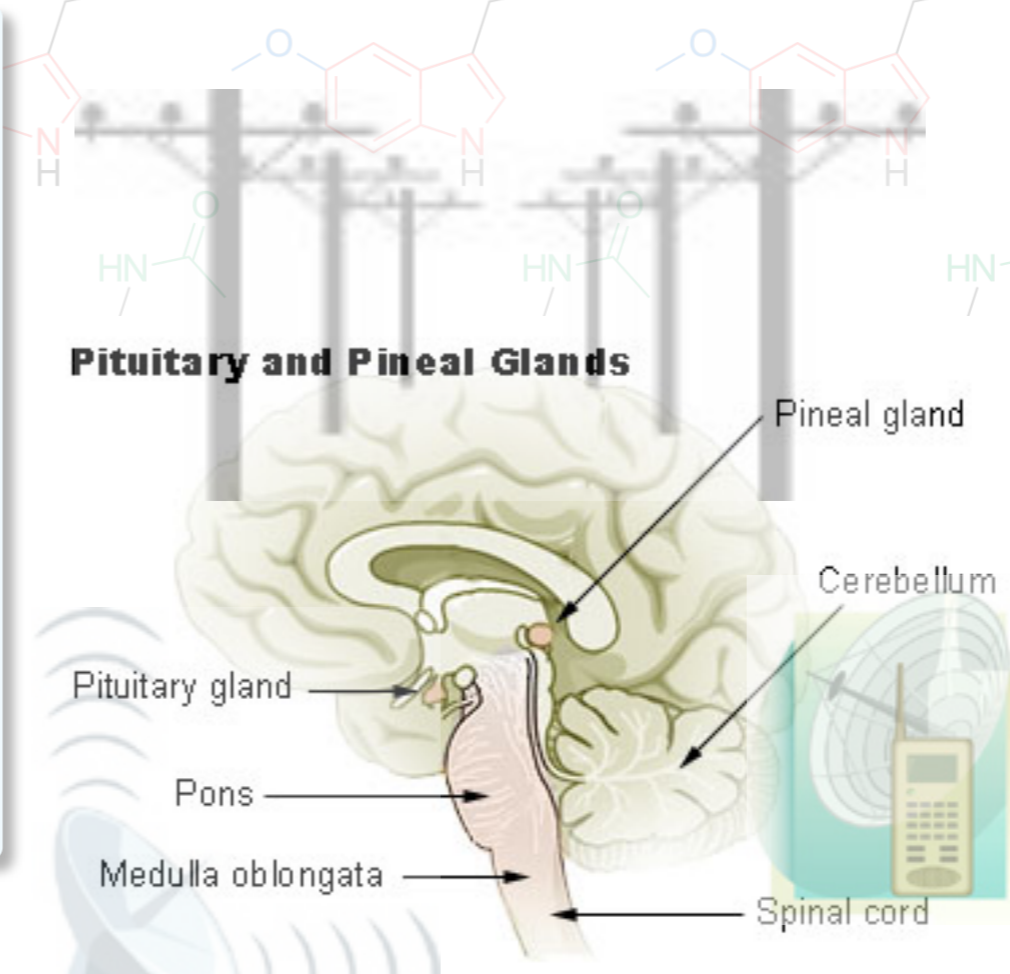


Melatonin is a hormone produced in the pineal gland in the center of the brain during the absence of light at night, peaking for a few hours after midnight. It is found in every cell in the body.

It helps enhance immune system function, maintain circadian rhythms, lower body temperature during REM sleep, scavenge free radicals (oxidative and nitrosative), alter the production of free radicals, upregulate other antioxidants -- protecting us against cancer, aging, and Alzheimer's disease. It is particularly protective to neuronal mitochondria (where many oxidants are produced).

While it is not certain that melatonin decreases are directly responsible for the EMF-related higher risk for breast cancer, it is a strongly suggested possibility; both increased risk and decreased melatonin are associated with EMF exposures (particularly occupational) in some studies.

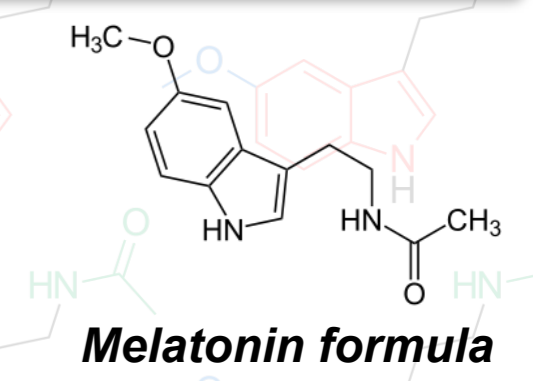
It is interesting to note that melatonin (related to our biologic clock) is produced in the same gland in which magnetite (related to our geomagnetic map) is concentrated, but there is little, if any, research on the relationship between them (together) and EMF. Separately, they are affected by EMF.



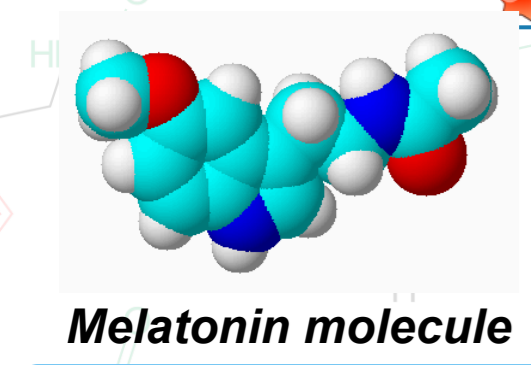
MELATONIN METABOLISM AS ONE BIOMARKER FOR MW/RF EXPOSURE
MELATONIN, MICROWAVE, BRAIN DAMAGE

★ **INDEX (PDF) OF ALL MAPS RELATED TO MELATONIN FUNCTION**

VIMEO:
RESONANCE
MAGNETITE, CRYPTOCHROME, MELATONIN, EMF



THE MELATONIN HYPOTHESIS



★ **INFLUENCE OF E, M, EM FIELDS ON CIRCADIAN SYSTEM**

BIOINITIATIVE 2012: MELATONIN



Let There Be Dark Importance of Melatonin

- ★ [Melatonin, Human Biological Clock](#)
- ★ [Melatonin protects liver against MW effects](#)
- [Melatonin protects rat cerebellar cells, RF damage](#)
- [Melatonin may protect against Alzheimer's disease](#)
- [Melatonin protects against oxidative injury, 2.45 GHz](#)
- [Melatonin, Alzheimer's and neurodegenerative diseases](#)
- ★ [Melatonin protects against oxi. stress, DNA damage from MW](#)

- Light is EMF, MF plus light
- ★ [Electrical workers, light, MF](#)
 - ★ [Light pollution, melatonin](#)
 - [Day exposure, night melatonin](#)

- EMF-Pineal gland
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- EMF Articles
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 - [ELF, melatonin, breast cancer](#)
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 - [Melatonin hypothesis revisited: comment](#)
 - [Article on mobile phones, disturbed sleep](#)
 - ★ [Electronic devices keeping you awake?](#)

MELATONIN AND EMF: THE MELATONIN HYPOTHESIS

Melatonin... has numerous properties which indicate that it helps prevent both Alzheimer's disease and breast cancer. There is strong evidence from epidemiologic studies that high (≥ 10 milligauss or mG), longterm exposure to extremely low frequency (ELF, ≤ 60 Hz) magnetic fields (MF) is associated with a decrease in melatonin production. *BioInitiative Section 12*

ELF-EMF levels between 0.6 and 1.2 μ T have been shown to consistently block the protective effects of melatonin. *BioInitiative Section 13*

EMF-Melatonin Studies



- [ELF, melatonin](#)
- [HF, melatonin, rats](#)
- [Light, ELF, circadian rhythm](#)
- [Video display units, melatonin](#)
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- [EMF reduces melatonin effects](#)
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- ★ [ELF, calves, melatonin effects seasonal](#)
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- ★ [MW, radar, occupational workers, melatonin, serotonin](#)
- [Melatonin in newborns exposed to incubator magnetic fields](#)
- [Exposure to EMF in utero affects post-natal melatonin production](#)
- [ELF, electrical workers, oxidative stress, melatonin, sleep problems](#)

CHANGES IN SLEEP ARCHITECTURE

- [Disrupted sleep](#)
- [Spindle spectral power](#)
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