

## **Applied Quantum Biology Research Papers**

### **1. Sunrise and early morning light:**

Effects of Dawn and Morning Blue Light on Daytime Cognitive Performance, Well-being, Cortisol and Melatonin Levels:

<https://pubmed.ncbi.nlm.nih.gov/23841684/>

Transition from Dim to Bright Light in the Morning Induces an Immediate Elevation of Cortisol Levels:

<https://academic.oup.com/jcem/article/86/1/151/2841140>

### **2. Bright natural light through the day:**

Time spent in outdoor light is associated with mood, sleep, and circadian rhythm-related outcomes: A cross-sectional and longitudinal study in over 400,000 UK Biobank participants:

<https://www.sciencedirect.com/science/article/abs/pii/S0165032721008612>

Bright daytime light enhances circadian amplitude in a diurnal mammal:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8179182/>

### **3. UVA sunlight**

An Unexpected Role: UVA-Induced Release of Nitric Oxide from Skin May Have Unexpected Health Benefits:

<https://www.sciencedirect.com/science/article/pii/S0022202X15368974>

### **4. UVB sunlight**

The risks and benefits of sun exposure:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5129901/>

The Health Benefits and Risks from Modern Sun Exposure:

<https://www.grassrootshealth.net/blog/health-benefits-risks-moderate-sun-exposure/>

Avoidance of sun exposure is a risk factor for all-cause mortality: results from the Melanoma in Southern Sweden cohort:

<https://pubmed.ncbi.nlm.nih.gov/24697969/>

#### **4. UVB sunlight continued**

How UV Light Touches the Brain and Endocrine System Through Skin, and Why:

<https://pubmed.ncbi.nlm.nih.gov/29546369/>

Sunlight Offers Surprise Benefit – It Energizes Infection Fighting T Cells:

<https://gumc.georgetown.edu/news-release/sunlight-offers-surprise-benefit-it-energizes-infection-fighting-t-cells/>

Skin Exposure to Narrow Band Ultraviolet (UVB) Light Modulates the Human Intestinal Microbiome:

<https://www.frontiersin.org/articles/10.3389/fmicb.2019.02410/full>

Cutaneous Malignant Melanoma Incidences Analyzed Worldwide by Sex, Age, and Skin Type over Personal Ultraviolet-B Dose Shows no Role for Sunburn but implies one for Vitamin D 3:

[https://www.researchgate.net/publication/312239669\\_Cutaneous\\_Malignant\\_Melanoma\\_Incidences\\_Analyzed\\_Worldwide\\_by\\_Sex\\_Age\\_and\\_Skin\\_Type\\_over\\_Personal\\_Ultraviolet-B\\_Dose\\_Shows\\_no\\_Role\\_for\\_Sunburn\\_but\\_implies\\_one\\_for\\_Vitamin\\_D\\_3](https://www.researchgate.net/publication/312239669_Cutaneous_Malignant_Melanoma_Incidences_Analyzed_Worldwide_by_Sex_Age_and_Skin_Type_over_Personal_Ultraviolet-B_Dose_Shows_no_Role_for_Sunburn_but_implies_one_for_Vitamin_D_3)

#### **5. Red light therapy/Photobiomodulation**

A Potential Role for Photobiomodulation Therapy in Disease Treatment and Prevention in the Era of COVID-19:

<https://pubmed.ncbi.nlm.nih.gov/33269093/>

How Photobiomodulation Therapy Can Improve Skin, Hair, Metabolism & Thyroid:

<https://wellnessmama.com/health/photobiomodulation/>

Photobiomodulation Directly Benefits Primary Neurons Functionally Inactivated by Toxins:

[https://www.jbc.org/article/S0021-9258\(20\)76125-9/fulltext](https://www.jbc.org/article/S0021-9258(20)76125-9/fulltext)

## **5. Photobiomodulation continued**

Red light and the sleep quality and endurance performance of Chinese female basketball players:

<https://pubmed.ncbi.nlm.nih.gov/23182016/>

Treatments for traumatic brain injury with emphasis on transcranial near-infrared laser phototherapy:

<https://pubmed.ncbi.nlm.nih.gov/26347062/>

Significant improvements in cognitive performance post-transcranial, red/near-infrared light-emitting diode treatments in chronic, mild traumatic brain injury: open-protocol study:

<https://pubmed.ncbi.nlm.nih.gov/24568233/>

## **6. Avoid artificial light at after dark**

Blue light has a dark side:

<https://www.health.harvard.edu/staying-healthy/blue-light-has-a-dark-side>

Daily blue-light exposure shortens lifespan and causes brain neurodegeneration in Drosophila:

<https://www.nature.com/articles/s41514-019-0038-6>

Acute effects of bright light exposure on cortisol levels:

<https://pubmed.ncbi.nlm.nih.gov/20484692/>

Circadian clocks and breast cancer:

<https://research.manchester.ac.uk/en/publications/circadian-clocks-and-breast-cancer>

Altered Circadian Rhythms and Breast Cancer: From the Human to the Molecular Level:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5945923/>

## **7. Mitigate Wi-Fi, cell phones & nnEMF's especially at night**

The interaction between electromagnetic fields at megahertz, gigahertz and terahertz frequencies with cells, tissues and organisms: risks and potential:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5945923/>

Microwave frequency electromagnetic fields (EMFs) produce widespread neuropsychiatric effects including depression:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5945923/>

UW researcher's wake-up call on cellphone radiation is finally getting heard:

<https://magazine.washington.edu/feature/uw-researchers-wake-up-call-on-cellphone-radiation-is-finally-getting-heard/>

The Comparative Study of 8Hz EMF Effect on Tissue Hydration in Brain Cortex and Subcortex of Rats:

<http://article.sapub.org/10.5923.j.als.20170703.01.html>

The effect of a high frequency electromagnetic field in the microwave range on red blood cells:

<https://www.nature.com/articles/s41598-017-11288-9>

## **8. Grounding**

The effects of grounding (earthing) on inflammation, the immune response, wound healing, and prevention and treatment of chronic inflammatory and autoimmune diseases:

<https://pubmed.ncbi.nlm.nih.gov/25848315/>

Electric Nutrition: The Surprising Health and Healing Benefits of Biological Grounding (Earthing):

<https://pubmed.ncbi.nlm.nih.gov/28987038/>

## **9. Cold Thermogenesis**

Cold-induced thermogenesis in humans:

<https://pubmed.ncbi.nlm.nih.gov/27876809/>

Cold acclimation recruits human brown fat and increases nonshivering thermogenesis:

<https://pubmed.ncbi.nlm.nih.gov/23867626/>



