

EMF Trauma

Understanding the Biological and Emotional Effects of EMF Exposures
30th IAACN Scientific Symposium, Plano, Texas, October 8th, 2021
Kathy Veon, DAOM, AP, CCN

Thank you for being here!

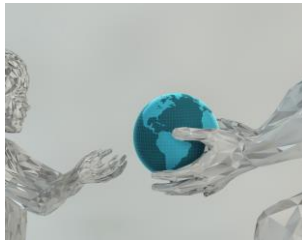




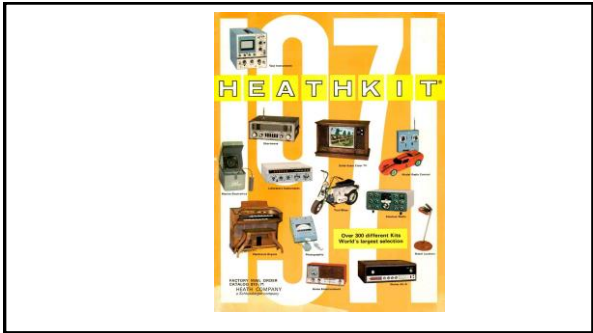
Our Role as Healthcare Practitioners

- Duty to inform patients of negative impacts of habits, behaviors, and environmental toxic exposures
- EMFs are the most overlooked environmental toxin
- Most healthcare practitioners do not consider the impact on the health of their patients
- Patients suffer needlessly due to the lack of awareness and lack of true understanding of the science

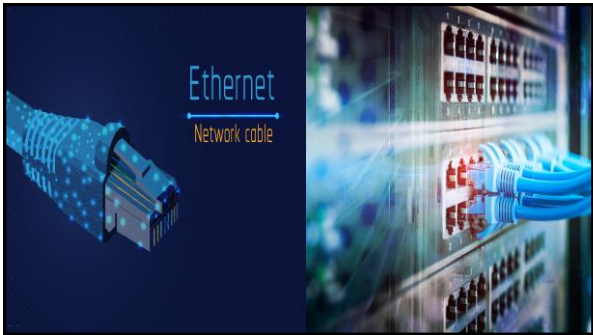
Our future depends on knowing, sharing and living the truth











EMFs?



Are your symptoms caused
by your wireless devices?

Common symptoms of
Microwave Sickness/Electro-Sensitivity



Microwave Sickness is likely the most immediate and widespread manifestation of the adverse health effects from radiation emitted from wireless devices and infrastructure. At least 10% of the population has already developed symptoms. The rates are likely higher.















What is Trauma?

trau·ma noun

- A deeply distressing or disturbing incident
- Emotional shock following a stressful event or physical injury
- A physical injury

EMF Trauma

- Social Consequences
- Social – Family and Friends
- Society – Misunderstanding and Lack of Knowledge
- Work and Daily Responsibilities

EMF Trauma

- Sleep
- Pain
- Memory and Brain Function
- Anxiety and Depression
- Fatigue
- Immune System Impairment
- Long-term Health Consequences / Chronic Illness

Health Statistics

- BCBS Report on Health of Millennials shows that health continues to decline with 2019 to 2020 comparisons
- 12% increase in major depression in 1 year
- 1/3 of Millennials have behavioral health conditions which increase the risk of developing chronic physical conditions

EXHIBIT 2: MILLENNIALS WITH BEHAVIORAL HEALTH CONDITIONS – LIKELIHOOD TO HAVE CHRONIC PHYSICAL CONDITIONS, 2014-2018



<https://www.bcbs.com/the-health-of-america/reports/millennial-health-trends-behavioral-health-conditions>

EXHIBIT 1: BEHAVIORAL HEALTH CONDITIONS DRIVING ADVERSE HEALTH FOR MILLENNIALS

Condition	Years of Healthy Life Lost	Prevalence Rate per 100, 2018	1-Year Change 2017-2018	5-Year Change 2014-2018
ADHD	1.8	6.9	1%	39%
Tobacco Use Disorder	0.7	5.9	5%	10%
Major Depression	7.8	5.6	12%	43%
Substance Use Disorder	10.2	2.1	5%	17%
Alcohol Use Disorder	10.0	1.6	7%	5%
Psychotic Disorders	15.4	0.9	0%	26%

<https://www.bcbs.com/the-health-of-america/reports/millennial-health-trends-behavioral-health-conditions>

Review of Studies

Brain development and function, mental health, stress related disorders, physical and chronic illness issues

Sleep and Pain

- 23 smartphone users between 18 and 65
- 99 females, 24 males. Migraine patients
- Studied to find correlation between increased migraines and decreased sleep quality with high or low smartphone use
- Strong correlation between smartphone use and increased headache duration and frequency
- Smartphone overuse lead to poor sleep quality and daytime sleepiness
- Overall decreased quality of life

Demir YP, Sumer MM. Effects of smartphone overuse on headache, sleep and quality of life in migraine patients. *Neurosciences (Riyadh)*. 2019 Apr;24(2):115-121. doi:10.17712/nsj.2019.2.20180037



Pain

- Four studies in Asia and three studies in Europe assessed correlation of mobile phone use and headaches
- Significant association of pain and mobile phone use
- Breakdown of the blood-brain barrier
- Changes in the dopamine-opiate system
- Both systems are affected by low-intensity electromagnetic energy

Wang, Su et al. Mobile phone use and the risk of headache: A systematic review and meta-analysis of cross-sectional studies. *Scientific Reports*. Volume 7, Article number:12595 (2017)

Sleep

- Study of persons age 18 – 30 with wireless phone use
- Serum Beta-trace proteins were found to be downregulated
- Levels decreased further with number of years using wireless phone
- Beta-trace protein is a key enzyme in the production of prostaglandin D2
- Prostaglandin D2: endogenous sleep-promoting neurohormone

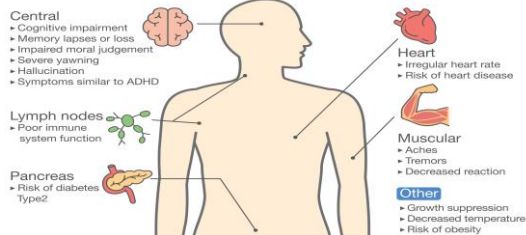
Hardell L, Carlberg M, Hedendahl LK. Radiofrequency radiation from nearby base stations gives high levels in an apartment in Stockholm, Sweden: A case report. *Oncol Lett*. 2018;15(5):7871–7883. doi:10.3892/ol.2018.8285

Sleep Quality

- 854 participants in final analysis for EMF exposures at work
- China: electrical power plant
- Results showed strong correlation with EMF exposure and poor sleep
- More damage to sleep quality rather than sleep duration

Liu H, Chen G, Pan Y, et al. Occupational electromagnetic field exposures associated with sleep quality: a cross-sectional study. *PLoS One*. 2014;9(10):e110825. Published 2014 Oct 23. doi:10.1371/journal.pone.0110825

Effects of Sleep Deprivation



EMFs and Brain Glucose Metabolism

- 47 healthy participants. Cell phone use for 50 minutes.
- Increased brain glucose metabolism in region closest to antenna
 - Orbitofrontal cortex
 - Depression, anxiety and mood disorders
 - Temporal lobe
 - Difficulty learning and retaining new information, impaired factual and long term memory
 - Emotional disturbances / aggressive behaviors
- Whole brain metabolism did not differ
- Excitability of brain tissue

Hardell L, Carlberg M, Hedendahl UK. Radiofrequency radiation from nearby base stations gives high levels in an apartment in Stockholm, Sweden: A case report. *Oncol Lett*. 2018;15(5):7871–7883. doi:10.3892/ol.2018.8285

Air Pods and Smart Phone



RF Radiation from Air Pods

- <https://www.youtube.com/watch?v=Ub0FdlkQnii>

Memory performance and RF-EMFs

- 439 students aged 12 to 17 years old. (Switzerland)
- 416 owned a mobile phone
- RF-EMF exposure affects the figural memory of adolescents

Schoeni, Roser et al. Memory performance, wireless communication and exposure to radiofrequency electromagnetic fields: A prospective cohort study in adolescents. *Environmental International*. Volume 85, December 2015, 343-351. DOI:10.1016/j.envint.2015.09.025

Maternal Cell Phone Use and Child Behavioral Problems

- 83,884 mother child pairs in 5 cohorts (Amsterdam, Danish, Spanish, Norwegian, Korean)
- Largest study to date (2016)
- Maternal cell phone use associated with increased risk of behavioral problems in the offspring
 - Hyperactivity / Inattention

Birks, Guxens et al. Maternal cell phone use during pregnancy and child behavioral problems in five birth cohorts. *Environmental International* 104. (2017) 122-131.

Mobile Phone Use and Inattention

- 7102 Chinese adolescents. (3613 males and 3489 females)
- Having the phone on the body was significantly associated with inattention
- Participants who turned cell phones off at night had significantly less inattention than those who left their phone on at night
- Adolescents with inattention are at higher risk of mood and conduct disorders, and substance abuse

Feizhou, Zheng, et al. "Association between mobile phone use and inattention in 7102 Chinese adolescents: a population-based cross-sectional study." *BMC Public Health*, vol. 14, no. 1022, 2014. <https://bmcpublichealth.biomedcentral.com/articles/10.1186/1471-2458-14-1022>

Demyelinating Syndrome and Exposure to Wireless Modem and Public Hot Spot

- Previous exposure to West Nile virus
- Losing sensation in her face, neck and torso
- Allergy symptoms like severe hay fever, tinnitus, vertigo, headache
- Short term memory loss and pain in facial bones and roots of teeth
- Elevated morning fasting blood sugar levels (+25%)
- After hotspot was disabled, the subject could focus and felt calmer
- Morning fasting blood sugar returned to normal after 2 weeks

Johansson, O., Redmayne, M. Exacerbation of demyelinating syndrome after exposure to wireless modem with public hotspot. *Electromagnetic Biology and Medicine*. 35:4. 393-397. DOI: 10.3109/15368378. 2015.1107839

Neuropsychiatric Effects

- Mammalian nervous systems are most sensitive to any other organ in the body to exposure to non-thermal microwave radiation and other EMFs
- Headache, irritability, dizziness, loss of appetite, depression, sleepiness, memory loss, emotional instability, hallucinations, tremors and insomnia

Pall, Martin L. "Microwave frequency electromagnetic fields (EMFs) produce widespread neuropsychiatric effects including depression." *Journal of Chemical Neuroanatomy* vol.75, pt. B, 2016, pp. 43-51.
<https://www.sciencedirect.com/science/article/pii/S0891061815000599>



Social – Family and Friends

- Disbelief due to lack of scientific knowledge and understanding
- Information censored by media and social media
- Inconvenience of making lifestyle changes

Work and Daily Responsibilities

- Stressors of working environment
- Income
- Adapting daily living to support health
- Out of the 'societal norms'



Lack of Knowledge and Understanding in Medical Community



Continuing education in every medical and healthcare field to focus on the science and awareness of how EMFs affect everyone's health

Support

- The patient is not 'crazy'



Lifestyle Changes and Avoidance

- Reducing exposure
- Hire a professional building biologist
- Use shielding materials when necessary

Nutrition

- Increased oxidation caused by EMF exposures requires increased intake of antioxidants through food therapies and supplementation
- Vitamins A, E, C
- Selenium
- Iodine
- Zinc
- CoQ10
- Chlorophyll
- B Vitamins

Nutrition

- Vitamin D
- Essential Fatty Acids
- Flavonoids (green or black tea)
- Indoles (cruciferous vegetables)
- Sulfur compounds (garlic)
- Magnesium
- Melatonin
- Glutathione
- Taurine

Melatonin and Omega 3 Published Research

- 900 MHz EMF exposure to rats
- EMF exposed group exhibited damage to brain structures (cortex, hippocampus, basal ganglia) with a decrease in number of granular and pyramidal cells and Purkinje cells
- Purkinje cells: Autism, Alzheimer's, neurological and immune-based diseases
- 4 Groups
 - Control Group with no EMF exposure
 - EMF exposure
 - EMF exposure with melatonin supplementation
 - EMF exposure with EPA/DHA supplementation

Altun, Kaplan et al. Protective effects of melatonin and omega-3 on the hippocampus and the cerebellum of adult Wistar albino rats exposed to electromagnetic fields. *Journal of Microscopy and Ultrastructure*. 10(3)2017: 236-243. <https://www.sciencedirect.com/science/article/pii/S2213570117300445>

Neural Circuit Development and Function in the Brain: 2014 Purkinje Cells, an Overview. Science Direct. <https://www.sciencedirect.com/topics/neuroscience/purkinje-cell>

Sadovnik A. Defining the role of cerebellar Purkinje cells in autism spectrum disorders. *Cerebellum*. 2013;12(6):950-955. doi:10.1007/s12111-013-9490-y

Melatonin and Omega 3 Published Research

- Rats not supplemented with either melatonin or EPA / DHA showed fewer Purkinje cells in the cerebellum and decreased number of granular cells and pyramidal cells in the hippocampus
- The administration of melatonin and EPA / DHA showed neuroprotective effects on repeated EMF exposure
 - Melatonin acts as a powerful antioxidant
 - Melatonin levels are decreased with EMF exposure
 - Supplementation may be necessary to restore healthy sleep patterns, reducing inflammation and cortisol response to 'stress'

Magnesium Published Research



- Rat study indicated that EMF exposures altered the mineral content of the teeth
- Significantly lower concentrations of serum Mg, Ca, Fe
- Decreased levels of Se in the kidneys, muscles, brain
- Decreased glutathione activity in kidneys and muscle
- Magnesium supplementation may alleviate elevated calcium caused by EMF exposures by increasing antioxidant substances such as superoxide dismutase (SOD).
- Epsom Salt Bath. Food therapy.
- Calm anxiety, improve sleep, assist with detoxification by stimulating cell activity. 300+ enzyme systems to regulate biochemical reactions.

Dogan MS, Yavas MC, Yavuz Y, et al. Effect of electromagnetic fields and antioxidants on the trace element content of rat teeth. *Drug Des Devel Ther*. 2017;11:1393-1398. Published 2017 May 4. doi:10.2147/DDDT.S132308
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5422323/>
 Chen N, Ru RJ, et al. Protective Effects of Magnesium Sulfate on Radiation Induced Brain Injury in Rats. *Current Drug Delivery*. 2018;15(8):1159-1166.
<http://dx.doi.org/10.1556/0011566618023117305> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC656417/>

Glutathione Published Research



- Glutathione (GSH) is the most abundant low molecular weight thiol compound synthesized in the cells
- Cysteine + Glutamate + Glycine
- Crucial role in protecting cells from oxidative damaging and toxicity by maintaining redox homeostasis and regulating cell cycle
- Removes reactive oxygen species (ROS) and protects cells from pathology
- Excessive ROS produces lipid peroxidation and large influx of calcium into the mitochondria, causing acidification of cytoplasm resulting in cell swelling or death
- GSH acts as antioxidant. Preventive therapy for overexposure to EMFs

Forman HJ, Zhang H, Rinna A. Glutathione: overview of its protective roles, measurement, and biosynthesis. *Mol Aspects Med*. 2009;30(1-2):1-12. doi:10.1016/j.mam.2008.08.006
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2696075/>
 Lauver D, Kaissarian N, 74. Lucchesi B. Oral Pretreatment with Liposomal Glutathione Attenuates Reperfusion Injury in Rabbit Isolated Hearts. *Journal of Cardiovascular Pharmacology*. 2013 Mar;61(3):233-9. doi: 10.1097/JVC.0b013e31827c0f02.

Glutathione Published Research

- EMF (WiFi) exposures caused pathological effects on both endocrine and exocrine pancreatic cells in mammalian developmental period
- Harmful effects on Langerhans islets leading to diabetes predisposition at a young age
- Increased glucose levels and pancreatic lesions in EMF exposed subjects
- Diabetes dx has been rapidly increasing in young people world wide
- Increased ROS / inflammatory responses caused by EMF exposures can be ameliorated with increased GSH production or supplementation

Topsakal, Senay, et al. "The ameliorative effect of gallic acid on pancreas lesions induced by 2.45 GHz electromagnetic radiation (Wi-Fi) in young rats." *Journal of Radiation Research and Applied Sciences* (2017).
<https://www.sciencedirect.com/science/article/pii/S1687850717300468>
 Lagman M, Ly J, Saling T, et al. Investigating the causes for decreased levels of glutathione in individuals with type II diabetes. *PLoS One*. 2015;10(3):e0118436. Published 2015 Mar 19. doi:10.1371/journal.pone.0118436
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4356817/>

Glutathione Published Research



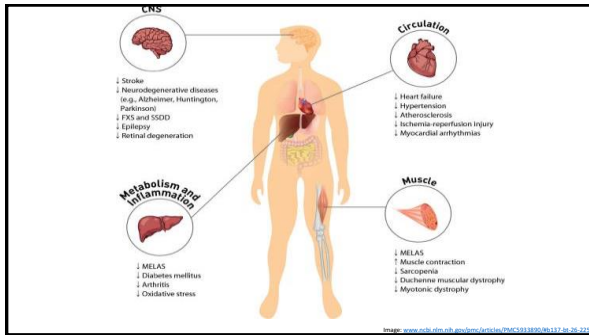
- Liposomal GSH supplementation was shown to increase plasma GSH levels in Autism (ASD)
- GSH provides neuroprotection in mesencephalic neuronal cells in Parkinson's Disease (PD) and other neuropsychiatric conditions associated with disturbances in GSH
- GSH was shown to directly remove ROS and decrease inflammatory responses recognized with chronic or over-exposure to EMFs
- Supplement with GSH precursors (NAC) and GSH + Food therapy
- Genetic Mutations

Kern JK, Geier DA, Adams JB, Garver CR, Audhya T, Geier MR. A clinical trial of glutathione supplementation in autism spectrum disorders. *Med Sci Monit* 2011;17(12):CR677-CR682. doi:10.12659/msm.882125 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3628138/>
 Zeevalk G, Bernard L, Guilford FT. Liposomal Glutathione Provides Maintenance of Intracellular Glutathione and Neuroprotection in Mesencephalic Neuronal Cells. *Neurochem Res* (2010) 35: 1575. <https://doi.org/10.1007/s11064-010-0217-0>

Taurine Published Research

- Sulfur containing amino acid found most abundantly in heart, retina and brain tissues
- Organic Osmolyte
 - Maintains cell volume and fluid balance
 - Prevents fibrillation and aggregation related diseases
- Antioxidant
 - Anti-inflammatory
 - Prevents mitochondrial membrane permeability and apoptosis
 - Protects against radiation
- Energy Metabolism
 - Conjugates bile to facilitate lipid absorption by the intestines
- Calcium Ion (Ca²⁺) Homeostasis
 - Protects heart and brain by diminishing Ca²⁺ overload

Effects and Mechanisms of Taurine as a Therapeutic Agent. Stephen Schaffer and Ha Won Kim. Department of Pharmacology, College of Medicine, University of South Alabama, Mobile, AL 36688, USA. Department of Life Science, University of Seoul, Seoul 02504, Republic of Korea. 2018 www.ncbi.nlm.nih.gov/pmc/articles/PMC5933890



Taurine Factors May Cause Deficiencies

- Infections (Candida, Lyme, Mold, Bacteria, Virus)
- Nutrient Deficiencies / Genetic Factors
 - Vitamin A
 - B6
 - Zinc
 - Manganese
- Excessive Intake of MSG / Glutamate
- Rx drugs / Antiepileptic
- Low Levels of Cysteine and Methionine
 - Small amounts of taurine can be made by the body

Taurine and Inflammatory Diseases. J. Marcinkiewicz, Department of Immunology, Jagiellonian University Medical College, 18 Czysta St., 31-121 Kraków, Poland. E. Konthy, Department of Pathophysiology and Immunology, Institute of Rheumatology, Warsaw, Poland. 2012. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3854431/pdf/7725_2012_Article_1361.pdf

Iodine Repletion Therapy: Iodine Facts



- Used in many ancient medical systems
- Anti-bacterial, anti-cancer/anti-tumor, anti-parasitic, anti-viral, mucolytic agent, raises pH, protects from radiation and other environmental toxins
- Widely deficient due to inadequate intake. Environmental toxins and medications block absorption
- Every tumor suppressing gene in the body requires iodine and selenium for healthy expression
- Highly concentrated in glandular system
 - Thyroid has highest concentration (*iodide*)
 - Breast, Ovaries/Uterus, Prostate/Testes (*iodine*), Brain (substantia nigra), Cerebrospinal Fluid, Eyes, Salivary Glands, Gastric Mucosa

Iodine Repletion Therapy: Environmental Toxins

- Wireless Radiation
- Mold
- Heavy Metals
- Chemicals
- Toxic Halides
 - *Bromides*: baking products, fire retardants, medications, agriculture/pest fumigants, sodas and energy drinks
 - *Chlorides*: treated water, pools/hot tubs, cleaning solvents
 - *Fluorides*: treated water, antidepressants
 - *Astatine*: cancer treatment, radioactive tracer

Iodine Repletion Therapy: Study of Cancer Patients

- 80 patients. 43 male. 37 female
- Cancer dx: Lung, Stomach, Prostate, Breast, Thyroid, Skin
- Spot Urine Sample for Iodine
- Median urinary iodine concentration was 17.4 ug/L. which is indicative of *severe iodine deficiency* (WHO)
- 81% patients: levels <20 ug/L. (*severe deficiency*)
- Optimal urinary iodine concentration is between 100-199 ug/L

World Health Organization. Urinary Iodine Concentrations for Determining Iodine Status in Populations. 2013.
https://apps.who.int/iris/bitstream/handle/10665/85972/WHO_NMH_NHD_EPG_13.1_eng.pdf

Kargar S, Shiryazdi SM, Atashi SR, Neamatzadeh H, Kamali M. Urinary Iodine Concentrations in Cancer Patients. Asian Pac J Cancer Prev. 2017;18(3):819-821. Published 2017 Mar 1. doi:10.22034/APJCP.2017.18.3.819 www.ncbi.nlm.nih.gov/pmc/articles/PMC5464505/

Iodine Repletion Therapy: Considerations



- 24 Hour Iodine Loading Test + toxic halide levels
- Repletion program
- Co-factors, nutrients, detoxification support
 - Vitamin C: symporter defect and detoxification
 - Selenium: detoxification and thyroid support
 - Magnesium: metabolic support
 - B vitamins (*riboflavin and niacin*): ATP support and autoimmune
 - Unrefined sea salt: binds to bromide, support adrenals and symporters
 - Liver support / Kidney support for detoxification / excretion
- Retest 6 – 12 months to maintain tissue saturation levels above 90%
- Genetic Mutations (iodine / selenium)

Iodine Repletion Therapy: Food Sources



- Seaweed, Sea Vegetables, Fish, and Seawater
- Supplemental Iodine / Iodide Preparations
 - Liquid (*iodide/iodine*)
 - Tablet (*iodide/iodine*)
 - Nascent (*iodine*)
- Dairy, Egg Yolks, Plant Sources
 - Depends on soil content, feed supplementation and milking procedures

Acupuncture

- *Classical Chinese Medicine*: Ancient system of medicine based on maintaining healthy homeostasis of living beings. Balance. Self-Harmonizing. Promoting & Maintaining Life. Understanding the 'systems within systems'.
- *Yin/Yang*: Rest/Action. Structure/Function. Night/Day. Cold/Hot. Female/Male. Right Brain/Left Brain. Internal/External. Deficient/Excess...
- *Methods of Healing*
 - Lifestyle Counseling, Exercise, Emotions/Feelings, Sense of Purpose, Relationships, Environment, Spirit, etc.
 - Food Therapy / Herbal & Nutrition Therapy
 - Acupuncture / Acupressure / Tui Na (medical massage), Cupping, Qi Gong (body movement and breathing).
 - Therapies that cultivate, regulate and move 'Vital Force' (*Qi*)

Acupuncture Published Research

- Therapeutic benefits result from its ability to regulate signaling pathways that lead to oxidative stress, excitotoxicity, inflammation, neuron survival and death.
- Promotes angiogenesis, neurogenesis and neuroplasticity.
- Acupuncture has been shown to regulate autophagy and apoptosis.
- Several key acupuncture points consistently proved to reduce oxidative stress and inflammation, excitotoxicity and neuron death.
- The most common points studied include: DU20, SP6, ST36, Ren6, DU14, GB34

Luo D, Chen R, Liang FX. Modulation of Acupuncture on Cell Apoptosis and Autophagy. *Evid Based Complement Alternat Med*. 2017;2017:8268736. doi:10.1155/2017/8268736
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5723958/>
Su Yeon Seo, Suk Yun Kang, et al. A mechanical acupuncture instrument mitigates the endoplasmic reticulum stress and oxidative stress of ovariectomized rats. *Integrative Medicine Research*. 2019. <https://doi.org/10.1016/j.imr.2019.07.001>

Acupuncture Published Research

- SP6 corrected cellular imbalances caused by Ca²⁺ leakage that leads to oxidative stress and depression. 1x day for 4 days.
- Alleviated endoplasmic reticulum (ER) stress and oxidative stress in the amygdala



Su Yeon Seo, Suk Yun Kang, et al. A mechanical acupuncture instrument mitigates the endoplasmic reticulum stress and oxidative stress of ovariectomized rats. *Integrative Medicine Research*. 2019. <https://doi.org/10.1016/j.imr.2019.07.001>
Images: [Deadman](#)

Acupuncture Published Research

- LV3 + BL23 significant reduction in oxidation via reduced ROS compared to control group. 1x day for 2 weeks



Hwa Young Shin, Hyun Jong Lee, Jae Soo Kim. The Protective Effects of Acupuncture on Oxidative Stress Caused by Cadmium in the Kidney. *Journal of Acupuncture Research*. Volume 32(1). 2015. DOI: <https://doi.org/10.13085/acupunct.2015001>
Images: [Deadman](#)

Acupuncture Published Research

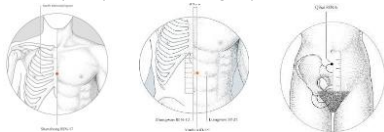
- Yin Tang (Extra Point 1) reduced EEG spectral entropy in both males and females presenting with insomnia, high stress or anxiety symptoms.
- Improved sympathetic / parasympathetic nerve balance
- Helpful for EMF overexposure



Arai YC, Ushida T, Matsubara T, et al. The Influence of Acupressure at Extra 1 Acupuncture Point on the Spectral Entropy of the EEG and LF/HF Ratio of Heart Rate Variability. *Evid Based Complement Alternat Med*. 2011;2011:503698. doi:10.1093/ecam/nen061
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3135712/>
Images: [Deadman](#)

Acupuncture Published Research

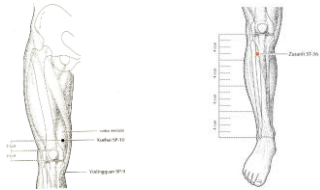
- Ren17, Ren12, Ren6, SP10, ST36 treated animals with high oxidative stress and cognitive deficits. 1x day for 21 days
- Treatment group showed significant increase in hippocampal SOD and glutathione activity compared to control group



Cun-Zhi Lui, Jian-Chuan, et al. Acupuncture prevents cognitive deficits and oxidative stress in cerebral multi-infarction rats. Neuroscience Letters, Vol. 393, 2006, p45-50. <https://www.ncbi.nlm.nih.gov/pubmed/16236447> Images: Deadman

Acupuncture Published Research

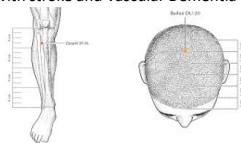
-SP10 and ST36



Images: Deadman

Acupuncture Published Research

- ST36 & DU20 reduced ROS activity, oxidative stress and inflammation that leads to the neurodegenerative process associated with stroke and Vascular Dementia (VD)



Images: Deadman

Guang-Xia Shi, Xue-Rui Wang, et al. Acupuncture elicits neuroprotective effect by inhibiting NADPH oxidase-mediated reactive oxygen species production in cerebral ischaemia. Scientific Reports, 2015. DOI: 10.1038/srep17981. <https://www.nature.com/articles/srep17981>
Si-Qi Du, Xue-Rui Wang, et al. Acupuncture inhibits TXNIP-associated oxidative stress and inflammation to attenuate cognitive impairment in vascular dementia rats. CNS Neuroscience and Therapeutics, 2017 <https://doi.org/10.1111/cns.12773>

Acupuncture Published Research

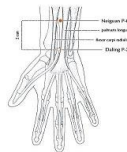
- LV3, ST36, DU20 daily for two weeks showed a reduction in the NADPH oxidative pathway and subsequent reduction in ROS production.



Xue-Rui Wang, Jing-Wen Yang, et al. Inhibition of NADPH Oxidase-Dependent Oxidative Stress in the Rostral Ventrolateral Medulla Mediates the Antihypertensive Effect of Acupuncture in Spontaneously Hypertensive Rats. *Hypertension*. 2018; 71:356-365. <https://doi.org/10.1161/HYPERTENSIONAHA.117.09759>

Acupuncture Published Research

- PC6 offers cardioprotective effects related to its potential ability to correct Na⁺, Ca²⁺ overload and mitochondrial damage



Dong B, Li C, et al. Electroacupuncture of Neiguan (PC 6) inhibits enhanced voltage-gated sodium currents in ischemic ventricular myocytes. *Journal of Traditional Chinese Medicine*. 2014. 34(6): 710-715. <https://www.ncbi.nlm.nih.gov/pubmed/25618976>

Medical Theory and Explanations

- Classical Chinese Medicine vs. Western Medicine
- Very rare pulse quality "leather pulse" is now *very common*
- Leather pulse is described as 'extreme hardness' due to chronic heat that has depleted fluids causing the vessel walls to lose flexibility and elasticity
- Leads to extreme essence, yin and blood deficiency
- Fluctuating symptoms and prone to chronic illness
- Previously termed 'neurasthenia' by western medicine

Hammer, Leon and Rosen, Ross., *The Pulse, the Electronic Age and Radiation: Early Detection*. The American Acupuncturist, Volume 47, Spring 2009. <https://www.comfoundations.org/articles/pulse-electronic-age-radiation.pdf>

Medical Theory and Explanations

- Five main principles to manage symptoms:
 - Eliminate radiation toxicity
 - Nourish yin
 - Nourish blood
 - Nourish jing-essence
 - Remove heat from blood and tissues
- Lifestyle modifications, herbs, food therapies and acupuncture

Hammer, Leon and Rosen, Ross., The Pulse, the Electronic Age and Radiation: Early Detection. The American Acupuncturist, Volume 47, Spring 2009. <http://www.comfoundation.org/articles/pulseelectronicageradiation.pdf>

Medical Theory and Explanations

- Chinese Medical Theory
 - EMF radiation creates excess heat and dries the yin (balancing fluid)
 - Reduces formation of blood cells
 - Essence that sustains bone marrow is depleted
 - Leads to cell mutations, tumors and cancers
- Western Biomedical Studies
 - Negative affects on bone marrow, reducing white blood cells production
 - Alters red blood cell formation and function
 - Increased risk of cancer and other chronic health issues

Hammer, Leon and Rosen, Ross., The Pulse, the Electronic Age and Radiation: Early Detection. The American Acupuncturist, Volume 47, Spring 2009. <http://www.comfoundation.org/articles/pulseelectronicageradiation.pdf>
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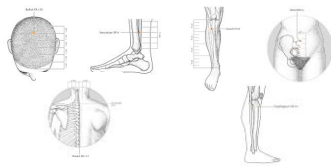
Autophagy Considerations

- Autophagy controls inflammation and supports healthy immune response
- Environmental toxic exposures (EMFs) can lead to poor autophagy function and increased risk of disease
- Prolonged exposures
- mTOR plays pivotal role in response to oxidative stress and autophagy process
 - Autophagy is affected by glutathione deficiency
 - EMFs deplete glutathione
- Genetic considerations / impairments

Deretic V, Levine B. Autophagy balances inflammation in innate immunity. Autophagy. 2018;14(2):243-251. doi:10.1080/15548627.2017.1402992 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5902214/>
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Tian T, Wang Z, et al. Pathomechanisms of Oxidative Stress in Inflammatory Bowel Disease and Potential Antioxidant Therapies. Oxidative Medicine and Cellular Longevity. 2017. <https://doi.org/10.1155/2017/4635158>

Autophagy Considerations Published Research

- Key acupuncture points proved to reduce oxidative stress and inflammation. DU20, SP6, ST36, Ren6, DU14, GB34



Luo D, Chen R, Liang FX. Modulation of Acupuncture on Cell Apoptosis and Autophagy. *Evid Based Complement Alternat Med*. 2017;2017:8268736. doi:10.1155/2017/8268736. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5723958/>
 Docman, Altun et al. Genotoxic and carcinogenic effects of non-ionizing electromagnetic fields. *Environmental Research*. Volume 163, May 2018, 71-79. <https://www.ncbi.nlm.nih.gov/pubmed/29411993>

Lifestyle Recommendations for Healthy Autophagy

- Herbal & Nutrition Therapy / Antioxidants
 - Green tea, turmeric, glutathione/NAC
- Fasting (overnight) / Calorie restriction
- Eliminate oxidative / processed foods (sugars, oils, chemicals, etc.)
- Exercise
 - High intensity or resistance training every other day
- Acupuncture
- Sauna
- Massage
- Restorative Sleep
- More time in Nature / Outdoors

Brandt N, Gunnarsson TP, Bangsbo J, Pilegaard H. Exercise and exercise training-induced increase in autophagy markers in human skeletal muscle. *Physiol Rep*. 2018;6(7):e13651. doi:10.14814/phy2.13651

Trauma – Reintegration Heaven and Earth

- EMFs: chaotic frequency. 'Dis'-integrating
- Inflammation and cellular dysfunction
- Acupuncture / Acupressure point stimulation for re-'integration' / healing
- Heaven associated with Spirit
- Earth associated with Body "Temple" of our Spirit
- 4 'Earthy' points: ST36, SP6, Ren4, Ren6
- 3 'Heavenly' points: GB13, DU20, Du24

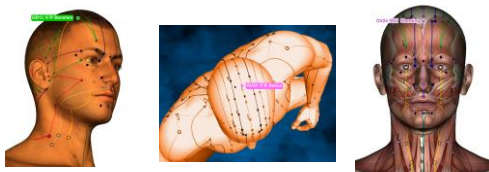
Earth Points

- ST36, SP6, Ren4, Ren6



Heaven Points

- GB13, DU20, DU24



Auricular Therapy

- Zero Point, Shen Men, Sympathetic Autonomic



NAET

'Allergy Elimination Technique'

- Combines acupuncture, chiropractic, kinesiology, nutrition
- Treatment stimulates 'pressure points' along the spine from neck to sacrum
- Acupressure / Acupuncture
- Alleviate neurological / immune / inflammatory response to EMFs

NET

Neuro Emotional Technique

- Acupuncture, chiropractic, kinesiology, homeopathy
- Meridian pulse points / emotional correlations
- Helps to alleviate the physiological / neurological and emotional 'stress' and trauma associated with EMF exposures / experiences
 - Cognitive
 - Emotional
 - Behavioral

In Conclusion: Raise Awareness

- Medical / Healthcare Field
- Communities
- Legislation
- Stand up for Truth, Science and Justice!
- Protect our Future!





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