

EMF Notes

- Papers
 - Voltage gated calcium channels
 - oxidation/reactive oxygen species
 - Blood brain barrier
 - DNA Breaks/genotoxicity
 - Autoimmunity
 - Autism
 - Cancer
 - Cardiovascular
 - Reproductive issues, birth defects etc
 - Children
 - Depression / mental health
 - Endocrine/energy
 - obesity/diabetes/metabolic disorder
 - melatonin/sleep
 - Neurological challenges
 - Tinnitus and ears
 - Eyes, skin and other barrier systems
 - Lifespan studies
 - Schuman resonance
 - Ecology
 - Synergy with other toxicity
 - Theoretical underpinnings
 - Inadequate safety standards
- Books
- Quotes

Papers

VGCCs

- [Low Intensity Electromagnetic Fields Act via Voltage-Gated Calcium Channel \(VGCC\) Activation to Cause Very Early Onset Alzheimer's Disease: 18 Distinct Types of Evidence - PMC](#) **emf paper to add *** really good**
 - Ref 23-27 show Alzheimers in people around 30, which was unheard of. One suggested emfs are (a) cause
 - 10 reviews (in ref 19) show that pulsed EMFs are far worse for us?
 - Biophotons are pulsed too?
- [Electromagnetic fields act via activation of voltage-gated calcium channels to produce beneficial or adverse effects - PubMed](#)
 - Eh, just a Martin pall paper I don't think I had?
- [Transmembrane voltage potential controls embryonic eye patterning in Xenopus laevis | Development | The Company of Biologists](#)

- Random papers on regeneration?
- [Transmembrane voltage potential is an essential cellular parameter for the detection and control of tumor development in a Xenopus model](#)
 - And tumor development? (same guy)
- [Molecular mechanisms of autism: a possible role for Ca²⁺ signaling - PubMed](#)
 - This paper suggests a role of Calcium in autism? Eh? A lot more in ch 13 of plourde
- VGCC
 - [Modulation of redox status and calcium handling by extremely low frequency electromagnetic fields in C2C12 muscle cells: A real-time, single-cell approach - PubMed](#)
 - [Microwave frequency electromagnetic fields \(EMFs\) produce widespread neuropsychiatric effects including depression - PubMed](#) (already have)
- Calcium important to brain
 - [Developing Neurons Form Transient Nanotubes Facilitating Electrical Coupling and Calcium Signaling with Distant Astrocytes | PLOS One](#)
 - [Glial calcium signaling and neuron-glia communication - PubMed](#)
- [Calcium-binding proteins and GFAP immunoreactivity alterations in murine hippocampus after 1 month of exposure to 835 MHz radiofrequency at SAR values of 1.6 and 4.0 W/kg - PubMed](#)
 - One more kind of like VGCCs
- [Exposure to 835 MHz RF-EMF decreases the expression of calcium channels, inhibits apoptosis, but induces autophagy in the mouse hippocampus - PubMed](#)
 - hippocampus/memory?
- <https://onlinelibrary.wiley.com/doi/abs/10.1002/%28SICI%291521-186X%281996%2917%3A2%3C144%3A%3AAID-BEM9%3E3.0.CO%3B2-3>
- [High frequency \(900 MHz\) low amplitude \(5 V m⁻¹\) electromagnetic field: a genuine environmental stimulus that affects transcription, translation, calcium and energy charge in tomato - PubMed](#)
 - Atp stuff? Tied to structured water
- [Sensitivity of calcium binding in cerebral tissue to weak environmental electric fields oscillating at low frequency - PMC](#)
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Reactive Oxygen Species /oxidative stress

- Next few are antioxidants
 - Would be able to explain a lot of other things. Without antioxidants, everything else (including sun) becomes more toxic
 - [Effect of acute extremely low frequency electromagnetic field exposure on the antioxidant status and lipid levels in rat brain - PubMed](#)
 - [M. Simko. \(2004\) Induction of cell activation processes by low frequency electromagnetic fields. Scientific World Journal, Suppl 2, 4, 4-22. - References](#)
 - [Mutagenic response of 2.45 GHz radiation exposure on rat brain - PubMed](#)
 - <https://pubmed.ncbi.nlm.nih.gov/17249331/>

- [Effect of 900 MHz radiofrequency radiation on oxidative stress in rat brain and serum - PubMed](#)
- [Oxidative stress induced by 1.8 GHz radio frequency electromagnetic radiation and effects of garlic extract in rats - PubMed](#)
- [900-MHz microwave radiation promotes oxidation in rat brain - PubMed](#)
- [Modulation of redox status and calcium handling by extremely low frequency electromagnetic fields in C2C12 muscle cells: A real-time, single-cell approach | Request PDF](#)
- [Mobile phone-induced myocardial oxidative stress: protection by a novel antioxidant agent caffeic acid phenethyl ester - PubMed](#)
- [The effects of exposure to electromagnetic field on rat myocardium - PubMed](#)
- [Effects of Electromagnetic Radiation Use on Oxidant/Antioxidant Status and DNA Turn-over Enzyme Activities in Erythrocytes and Heart, Kidney, Liver, and Ovary Tissues From Rats: Possible Protective Role of Vitamin C. \(2008\) | Erdinç Devrim](#)
- [Recent reports of Wi-Fi and mobile phone-induced radiation on oxidative stress and reproductive signaling pathways in females and males - PubMed](#)
- [900 MHz radiofrequency-induced histopathologic changes and oxidative stress in rat endometrium: protection by vitamins E and C - PubMed](#)
- [Wi-Fi \(2.45 GHz\)- and mobile phone \(900 and 1800 MHz\)-induced risks on oxidative stress and elements in kidney and testis of rats during pregnancy and the development of offspring - PubMed](#)
- [The roles of cellular reactive oxygen species, oxidative stress and antioxidants in pregnancy outcomes - PubMed](#)
 - Eh, reactive oxygen? Delete?
- [Effect of 950 MHz UHF Electromagnetic radiation on biomarkers of oxidative damage, metabolism of UFA and antioxidants in the liver of young rats of different ages](#)
- [900 MHz pulse-modulated radiofrequency radiation induces oxidative stress on heart, lung, testis and liver tissues](#)
- [Wi-Fi \(2.45 GHz\)- and mobile phone \(900 and 1800 MHz\)-induced risks on oxidative stress and elements in kidney and testis of rats during pregnancy and the development of offspring - PubMed](#)
- [\[Effect of American Ginseng Capsule on the Liver Oxidative Injury and the Nrf2 Protein Expression in Rats Exposed by Electromagnetic Radiation of Frequency of Cell Phone\] - PubMed](#)
- [The effect of electromagnetic radiation emitted by display screens on cell oxygen metabolism - in vitro studies - PubMed](#)
- [Effects of Electromagnetic Radiation Use on Oxidant/Antioxidant Status and DNA Turn-over Enzyme Activities in Erythrocytes and Heart, Kidney, Liver, and Ovary Tissues From Rats: Possible Protective Role of Vitamin C - PubMed](#)
- [Effect of mobile phone exposure on apoptotic glial cells and status of oxidative stress in rat brain](#)
- [900 MHz pulse-modulated radiofrequency radiation induces oxidative stress on heart, lung, testis and liver tissues](#)

- [Effects of computer monitor-emitted radiation on oxidant/antioxidant balance in cornea and lens from rats](#)
- [Cell type specific redox status is responsible for diverse electromagnetic field effects - PubMed](#)
 - Eh?
- [\[Effect of electromagnetic field produced by mobile phones on the activity of superoxide dismutase \(SOD-1\) and the level of malonyldialdehyde \(MDA\)--in vitro study\] - PubMed](#)
this one's validating martin pall's claims about superoxides right? (which then go on to cause a whole host of DNA breaks and oxidative stresses)
- [The effect of prenatal exposure to 900-MHz electromagnetic field on the 21-old-day rat testicle - PubMed](#)
- [Morphological and antioxidant impairments in the spinal cord of male offspring rats following exposure to a continuous 900 MHz electromagnetic field during early and mid-adolescence - ScienceDirect](#)
- [Can prenatal exposure to a 900 MHz electromagnetic field affect the morphology of the spleen and thymus, and alter biomarkers of oxidative damage in 21-day-old male rats? - PubMed](#)

Blood brain barrier /barriers

- [Radiofrequency and extremely low-frequency electromagnetic field effects on the blood-brain barrier - PubMed](#)
- [Electromagnetic fields and the blood-brain barrier - PubMed](#)
- [Effects of microwave radiation on brain energy metabolism and related mechanisms - PMC](#)
- [Nerve cell damage in mammalian brain after exposure to microwaves from GSM mobile phones - PubMed](#)
- [Development of the blood-brain barrier - PubMed](#)
- [Increased blood-brain barrier permeability in mammalian brain 7 days after exposure to the radiation from a GSM-900 mobile phone - PubMed](#)
- [Blood-brain barrier permeability and nerve cell damage in rat brain 14 and 28 days after exposure to microwaves from GSM mobile phones - PubMed](#)
- [Exposure to 900 MHz electromagnetic fields activates the mkp-1/ERK pathway and causes blood-brain barrier damage and cognitive impairment in rats - PubMed](#)
- [Mobile and cordless telephones, serum transthyretin and the blood-cerebrospinal fluid barrier: a cross-sectional study - PubMed](#)
- [Tight junctional abnormality in multiple sclerosis white matter affects all calibres of vessel and is associated with blood-brain barrier leakage and active demyelination - PubMed](#)
 - Tight junctions tied to MS? Myelin sheets and electrical shit could tie into emfs?
 - Could be something , could be nothing
- [Blood-brain barrier permeability and nerve cell damage in rat brain 14 and 28 days after exposure to microwaves from GSM mobile phones. - Lund University](#)
 - Eh is this significant?

- [Increased permeability of the blood-brain barrier induced by magnetic and electromagnetic fields - PubMed](#)
- [Disruption in the Blood-Brain Barrier: The Missing Link between Brain and Body Inflammation in Bipolar Disorder? - PMC](#)
- [Downregulation of gap junctions in cancer cells - PubMed](#)
 - Wow gap junctions tied to cancer?
- [Influence of acute arterial hypertension on blood-brain barrier permeability in streptozocin-induced diabetic rats - ScienceDirect](#)
 - [Influence of 50 Hz Frequency Sinusoidal Magnetic Field on the Blood-Brain Barrier Permeability of Diabetic Rats - PubMed](#)
 - Same stuff, but second is sinusoidal? Carrier waves should not create damage right?
- [Blood-brain barrier permeability in rats exposed to electromagnetic fields used in wireless communication | Wireless Networks | Springer Nature Link](#)
- [Permeability of the blood-brain barrier induced by 915 MHz electromagnetic radiation, continuous wave and modulated at 8, 16, 50, and 200 Hz - PubMed](#)
- [Nerve cell damage in mammalian brain after exposure to microwaves from GSM mobile phones - PubMed](#)
 - The really bad one, a single 2 hours exposure to cell phones caused permanent brain damage in rats?
 - Blood brain barrier damaged at all strengths, but this was when the signal was a thousand times lower, equivalent of phone being several feet away? (damage increased)
 - [Don't call us, we'll call you | Nature Reviews Neuroscience](#) potential follow up on it (not sure if good or bad?)
 - 2% of neurons were “shrunk and degenerated?” (firstenberg’s words)
 - **This one appears to be the key***
 - Other effects besides blood brain barrier
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Dna breaks/ genetic damage

- [Extremely low-frequency electromagnetic fields cause DNA strand breaks in normal cells - PMC](#)
- [Effect of GSTM1 and GSTT1 Polymorphisms on Genetic Damage in Humans Populations Exposed to Radiation From Mobile Towers](#)
- [Transient DNA damage induced by high-frequency electromagnetic fields \(GSM 1.8 GHz\) in the human trophoblast HTR-8/SVneo cell line evaluated with the alkaline comet assay - PubMed](#)
- [Induction of DNA strand breaks by intermittent exposure to extremely-low-frequency electromagnetic fields in human diploid fibroblasts - PubMed](#)
 - This is a really key one that shows that *pulsings* signals are the most damaging?
 - [Cell type-specific genotoxic effects of intermittent extremely low-frequency electromagnetic fields - PubMed](#) -two random, potentially related papers

- [Age-related Effects on Induction of DNA Strand Breaks by Intermittent Exposure to Electromagnetic Fields - PubMed](#)
- [Non-thermal DNA breakage by mobile-phone radiation \(1800 MHz\) in human fibroblasts and in transformed GFSH-R17 rat granulosa cells in vitro - PubMed](#)
 - Non-thermal radiation can break dna strands?
 - [Comments on: "DNA strand breaks" by Diem et al. \[Mutat. Res. 583 \(2005\) 178-183\] and Ivancsits et al. \[Mutat. Res. 583 \(2005\) 184-188\] - PubMed](#)
-random comment, potentially a rebuttal? Oh, I guess an accusation of fraud?
 - [Critical comments on DNA breakage by mobile-phone electromagnetic fields \[Diem et al., Mutat. Res. 583 \(2005\) 178-183\] - PubMed](#) - I guess decided not to retract the paper? That's a mess
 - [Answer to comments by A. Lerchl on "Radiofrequency electromagnetic fields \(UMTS, 1.950 MHz\) induce genotoxic effects in vitro in human fibroblasts but not in lymphocytes" published by C. Schwarz et al. 2008](#)
 - [Editorial: controversy related to two published papers | Request PDF](#)
 - <https://pubmed.ncbi.nlm.nih.gov/19914398/>
 - [University calls for mobile phone research to be withdrawn after technician admits faking data - PMC](#) what is this one? (I found it on my own)
- [Evaluation of the cytogenotoxic damage in immature and mature rats exposed to 900 MHz radiofrequency electromagnetic fields - PubMed](#)
 - [Cytotoxic and genotoxic effects of high-frequency electromagnetic fields \(GSM 1800 MHz\) on immature and mature rats - PubMed](#)
- [Does prolonged radiofrequency radiation emitted from Wi-Fi devices induce DNA damage in various tissues of rats? | Request PDF](#)
- **Mechanism from martin pall**
- [Single-strand DNA breaks in human hair root cells exposed to mobile phone radiation - PubMed](#)
- https://www.academia.edu/16205033/CYTOGENETIC_DAMAGES_INDUCED_BY_CHRONIC_EXPOSURE_TO_MICROWAVE_NON_IONIZING_RADIOFREQUENCY_FIELDS?email_work_card=title
- [The toxic effects of mobile phone radiofrequency \(940 MHz\) on the structure of calf thymus DNA - PubMed](#)
- [Magnetic-field-induced DNA strand breaks in brain cells of the rat - PMC](#) ** lai is the important stuff? Lai is super important
- [Acute exposure to a 60 Hz magnetic field increases DNA strand breaks in rat brain cells - PubMed](#) (same?) lai
- [Melatonin and N-tert-butyl- \$\alpha\$ -phenylnitron block 60-Hz magnetic field-induced DNA single and double strand breaks in rat brain cells - Lai - 1997 - Journal of Pineal Research - Wiley Online Library](#) lai!
- [Magnetic-field-induced DNA strand breaks in brain cells of the rat - PubMed](#)
- [Genotoxic effects of radiofrequency electromagnetic fields - ScienceDirect](#) why is it half and half?

autoimmune

- [Electrosmog and autoimmune disease - PMC](#) eh?
- [Maternal Exposure to Magnetic Fields During Pregnancy in Relation to the Risk of Asthma in Offspring - PubMed](#)
- [\[Effects of electromagnetic radiation on health and immune function of operators\] - PubMed](#)
- [Exposure of rats to extremely low-frequency electromagnetic fields \(ELF-EMF\) alters cytokines production - PubMed](#)
- [Disturbance of the immune system by electromagnetic fields-A potentially underlying cause for cellular damage and tissue repair reduction which could lead to disease and impairment - PubMed](#)
- [Electromagnetic hypersensitivity: biological effects of dirty electricity with emphasis on diabetes and multiple sclerosis - PubMed](#) how much do I have on dirty electricity? Eh MS?
- [Disturbance of the immune system by electromagnetic fields-A potentially underlying cause for cellular damage and tissue repair reduction which could lead to disease and impairment -autoimmunity?](#)
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Autism

- [Autism and EMF? Plausibility of a pathophysiological link part II - PubMed](#)
- [A possible association between fetal/neonatal exposure to radiofrequency electromagnetic radiation and the increased incidence of autism spectrum disorders \(ASD\) - PubMed](#)
- [Autism and EMF? Plausibility of a pathophysiological link – Part I - ScienceDirect](#)
 - [Autism and EMF? Plausibility of a pathophysiological link part II - PubMed](#) (already have one half of this article)
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Cancer /tumors

- [Occupational exposure to extremely low-frequency magnetic fields and brain tumor risks in the INTEROCC study - PubMed](#)
- [Mobile phone and cordless phone use and the risk for glioma - Analysis of pooled case-control studies in Sweden, 1997-2003 and 2007-2009 - PubMed](#)
- [Tumor promotion by exposure to radiofrequency electromagnetic fields below exposure limits for humans - PubMed](#)
- [Multifocal Breast Cancer in Young Women with Prolonged Contact between Their Breasts and Their Cellular Phones - PMC](#)

- [Relationship between exposure to extremely low-frequency electromagnetic fields and breast cancer risk: a meta-analysis - PubMed](#)
- [Exposure to electromagnetic fields \(non-ionizing radiation\) and its relationship with childhood leukemia: a systematic review - PubMed](#)
- [Electromagnetic fields at mobile phone frequency induce apoptosis and inactivation of the multi-chaperone complex in human epidermoid cancer cells - PubMed](#)
 - follow up? Apoptosis (only one looks worth mentioning)
- [Incidence Trends in the Anatomic Location of Primary Malignant Brain Tumors in the United States: 1992–2006](#)
 - increase in glioblastomas? That's really weak. Maybe it's just saying that tumors moved towards cell phones?
- [Cellular neoplastic transformation induced by 916 MHz microwave radiation - PubMed](#)
 - Huge tumors induced by cell phones?
- [Mortality by neoplasia and cellular telephone base stations in the Belo Horizonte municipality, Minas Gerais state, Brazil - PubMed](#)
 - Distance from cell tower predicts cancer?
 - [Comments on "Mortality by neoplasia and cellular telephone base stations in the Belo Horizonte municipality, Minas Gerais state, Brazil" by A. C. Dode et al. Science of the Total Environment 409 \(2011\) 3649-3665 - PubMed](#) (rebuttal?)
 - [Comments on "Foster KR, Trottier L, comments on "mortality by neoplasia and cellular telephone base stations in the Belo Horizonte municipality, Minas Gerais state," Sci Total Environ \(2012\), doi: 10.1016/j.scitotenv.2012.06.007" counter rebuttal?](#)
- [Cell phones and brain tumors: a review including the long-term epidemiologic data - PubMed](#)
 - A meta-analysis seems to be getting to the bottom of things?
- [Low-frequency electromagnetic radiation enhances the induction of rat mammary tumors by nitrosomethyl urea - PubMed](#)
 - Is this credible science? (I don't see any ORs or p values in abstract)
- [Use of mobile phones and cordless phones is associated with increased risk for glioma and acoustic neuroma - PubMed](#)
 - Something else?
 - [Mobile phones, cordless phones and the risk for brain tumours - PubMed](#)
 - [Decreased survival of glioma patients with astrocytoma grade IV \(glioblastoma multiforme\) associated with long-term use of mobile and cordless phones - PubMed](#) (eh, it's mdpi)
- References in a PLOS1 paper that was retracted? (could be all crap)
 - [Mobile phone use and risk of intracranial tumors: A consistency analysis](#)
 - [Phantom limb pain induced in amputee by strong magnetic fields - Yuh - 1992](#)
 - [Biological effects of exposure to magnetic resonance imaging: an overview | BioMedical Engineering OnLine | Springer Nature Link](#)
 - https://journals.lww.com/clinicalpain/abstract/2012/09000/painful_neuromas.13.aspx

- [a case-control study of childhood leukemia and residential power-frequency magnetic fields in Japan - PubMed](#)
- [Acute childhood leukemias and exposure to magnetic fields generated by high voltage overhead power lines - a risk factor in Iran - PubMed](#)
- [Living near overhead high voltage transmission power lines as a risk factor for childhood acute lymphoblastic leukemia: a case-control study - PubMed](#)
- [Mobile phone use and risk for intracranial tumors and salivary gland tumors - A meta-analysis - PubMed](#)
- [Mobile phone use and risk of tumors: a meta-analysis - PubMed](#)
- [Mobile phone use and risk of brain tumours: a systematic review of association between study quality, source of funding, and research outcomes - PubMed](#)
- [On the association between glioma, wireless phones, heredity and ionising radiation - PubMed](#)
- [Mobile phone use and brain tumours in the CERENAT case-control study - PubMed](#)
- [Brain cancer and occupational exposure to magnetic fields among men: results from a Canadian population-based case-control study - PubMed](#)
- [Using the Hill viewpoints from 1965 for evaluating strengths of evidence of the risk for brain tumors associated with use of mobile and cordless phones - PubMed **?](#)
- [Mobile phone radiation causes brain tumors and should be classified as a probable human carcinogen \(2A\) \(review\) - PubMed](#)
- [Incidence of breast cancer in Norwegian female radio and telegraph operators - PubMed](#)
- [pubmed.ncbi.nlm.nih.gov/9647902/](#)
- [Occupational and residential magnetic field exposure and breast cancer in females - PubMed](#)
- [Long-term exposure to magnetic fields and the risks of Alzheimer's disease and breast cancer: Further biological research - PubMed](#)
- [A meta-analysis on the relationship between exposure to ELF-EMFs and the risk of female breast cancer - PubMed](#)
- [Electromagnetic field exposure and male breast cancer risk: a meta-analysis of 18 studies - PubMed](#)
- [Relationship between exposure to extremely low-frequency electromagnetic fields and breast cancer risk: a meta-analysis](#)
- [On the association between glioma, wireless phones, heredity and ionising radiation - PubMed](#)
 - Big effects here?
- [Re: Mobile Phone Use and Brain Tumors in Children and Adolescents: A Multicenter Case-Control Study](#)
- [Extremely low-frequency magnetic fields and risk of childhood leukemia: A risk assessment by the ARIMMORA consortium - PubMed](#)
- [Use of mobile and cordless phones and survival of patients with glioma - PubMed](#)
- [Magnetic fields exposure and childhood leukemia risk: a meta-analysis based on 11,699 cases and 13,194 controls - PubMed](#)
- [Residence near high voltage facilities and risk of cancer in children epidem.](#)
- <https://www.emf-portal.org/en/article/16845>

- [Cancer incidence and mortality and proximity to TV towers epidem.](#)
- [TV towers and childhood leukaemia \(continued\)](#)
- [\[Epidemiological features of brain tumors\] - PubMed](#)
- [Electrical wiring configurations and childhood cancer - PubMed](#) already have, but damn does this really mean that mercola was right?
- [Childhood cancer in relation to a modified residential wire code - PubMed](#) same
- [Alternating electric fields arrest cell proliferation in animal tumor models and human brain tumors - PMC](#)
- [Long-term use of cellular phones and brain tumours: increased risk associated with use for > or =10 years - PubMed](#)
- [The Influence of Being Physically Near to a Cell Phone Transmission Mast on the Incidence of Cancer](#)
 - “There is no established scientific link between living near a cell phone transmission mast and an increased incidence of cancer. Comprehensive reviews from major health institutions consistently show no causal association between cell tower radiofrequency exposure and cancer.” -chatGPT (technically google’s ai), right before recommending this paper
 - **Is there something about mast cells?** (no)
- [The INTERPHONE study: design, epidemiological methods, and description of the study population - PubMed](#)
 - [Microwave News | Interphone Points to Long-Term Brain Tumor Risks; Interpretation Under Dispute](#) - these two could shed some light? I’m still lost at how we get such conflicting results for things like cancer
 - <https://web.archive.org/web/20080802133806/https://www.microwavenews.com/interphonecracks.html>
- [IARC classifies Radiofrequency Electromagnetic Fields as possibly carcinogenic to humans](#)
- [Long-term exposure to microwave radiation provokes cancer growth: Evidences from radars and mobile communication systems](#)
- [Cellular phone use and risk of benign and malignant parotid gland tumors--a nationwide case-control study - PubMed](#)
- [Mobile phone use and the risk of acoustic neuroma - PubMed](#)
- [Cell phone-cancer link found by Tel Aviv University scientist | EurekAlert!](#) (eh i think I have?)
- [Electrical wiring configurations and childhood cancer - PubMed](#)
- [Leukaemia, brain tumours and exposure to extremely low frequency magnetic fields: cohort study of Swiss railway employees - PMC](#)
- [Mobile phone use and the risk for malignant brain tumors: a case-control study on deceased cases and controls - PubMed](#) seems like a good hardell paper (others below; these are new)
 - [Re-analysis of risk for glioma in relation to mobile telephone use: comparison with the results of the Interphone international case-control study - PubMed](#) - reanalysis of other paper? Will this help me settle some debates?

- [Cell phones and brain tumors: a review including the long-term epidemiologic data - PubMed](#)
 - Already have this one, but still good to keep
- [Full article: FM Broadcasting Exposure Time and Malignant Melanoma Incidence](#)
 - **Figure 4 finally someone tries to correlate how strong these connections are.** ($p < 0.000001$, $r^2 = .9755$).
 - Other papers by hallberg and johanson:
 - [Sleep on the right side-Get cancer on the left? - PubMed](#)
 - [1997 - A curious year in Sweden](#)
 - [Melanoma incidence and frequency modulation \(FM\) broadcasting - PubMed](#)
 - [A theory and model to explain the skin melanoma epidemic | Semantic Scholar](#)
 - [The Effects Of Radiation In The Cause Of Cancer](#)
- [Malignant melanoma of the skin - not a sunshine story! - PubMed](#)
 - Correlate fm radio and melanoma?
 - Prove that there was no increase in ozone depletion in 1955 and swedes didn't travel more to sunny countries in 1960.
 - **"The embarrassing truth is that rates of melanoma on the head and feet hardly rose at all between 1955 and 2008, while rates for sun-protected areas in the middle of the body increased by a factor of twenty. Most moles and melanomas are now occurring not on the head, arms, and feet, but in areas of the body that are not exposed to sunshine."** - firstenberg.
 - **Ties in to sunscreen book!!**
- [Cancer incidence near radio and television transmitters in Great Britain. I. Sutton Coldfield transmitter - PubMed](#) - hallberg follows up on these papers in one of these papers, maybe the 2005 paper?
 - Melanoma correlated with distance to power station, extended to all of britain in second paper?
 - FM frequency close to "resonant frequency of the human body" (whatever that means).
 - [Cancer incidence near radio and television transmitters in Great Britain. II. All high power transmitters - PubMed](#)
- [A theory and model to explain the skin melanoma epidemic - PubMed](#)
- https://www.researchgate.net/publication/260436911_A_sentinel_case_series_of_cancer_patients_with_occupational_exposures_to_electromagnetic_non-ionizing_radiation_and_other_agents
 - Already have this somewhere, but super important?
 - Cancer after radio waves, in surprisingly short period of time? **5-6 months?**
 - **"This dispelled the notion that we must wait ten or twenty years to see the effects of cell phones on the world's population."** - firstenberg
 - Richter's team warns that **"with the recent introduction of WiFi into schools, personal computers for each pupil in many schools, high frequency voltage transients measured in schools—as well as the population-wide use of cellphones, cordless phones, some exposure to cellphone towers, residential exposure to RF/MW from Smart Meters and**

other 'smart' electronic equipment at the home and possibly also ELF exposures to high power generators and transformers young people are no longer free from exposure to EMF." -double check that this quote is in the paper; eh

- Had cancers ranging from lymphomas, brain, nasopharynx, rectum, colon, testis, bone, parotid gland, breast skin, lung, and countless others.
- [Childhood cancer in the vicinity of the Sutro Tower, San Francisco.](#) does this show additional harm?
 - **Children who lived less than one kilometer from the tower had 9times the rate of leukemia, 15 times the rate of lymphoma, 31 times the rate of brain cancer, and 18 times the total cancer rate, as children in the rest of the city???? Is that right?**
 - **No way it's that high without others being lower** (firstenberg miscited a paper earlier, so we should be careful.)
- [Cancer incidence and mortality and proximity to TV towers - PubMed](#)
 - This one didn't find brain cancer, but did find 150% increase of leukemia mortality living near broadcast towers I think?
 - **This science is still far more nascent than other fields? Like vaccines, could it be that we truly aren't able to measure against controls? Yeah this is just ONE aspect of wireless radiation.**
- [Adult and childhood leukemia near a high-power radio station in Rome, Italy - PubMed](#)
 - Not sure if this is the right paper. Seems much weaker than the data below.
 - Children under 14 between 3 and 7 miles from the vatican developed leukemia, lymphoma or myeloma at 8 x the rate of children who lived further away? (between 1997 and 2003)
 - Adults in a similar range died of leukemia at almost 7x the rate of adults who lived further away. (can I prove this?)
 - **Need to find actual paper for this.**
 - **Oh is there a subset of the data based on distance that shows the worst?**
 - Roberto tucci sentenced to prison in 2011 for radio waves from 58 powerful radio towers around the vatican.
 - **"And for decades, residents in those communities had been screaming that the transmissions were destroying their health as well as causing an epidemic of childhood leukemia."** -just valuable on it's own tbh
 - [Vatican Radio found guilty of polluting the airwaves | ICN](#) -eh a random article on this.
 - **What years were the towers active? What year do I want to put this under?**
- [Cell Phones and Cancer Risk Fact Sheet - NCI](#) this is the nonsense claiming cell phons are safe? Need to debunk at some point. (delete? Yeah, I might delete)
- [Cancer Promotion By Radiowave Emissions](#) random seems good? (from random firstenberg references)
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Heart/cardiovascular

- [The influence of the call with a mobile phone on heart rate variability parameters in healthy volunteers](#)
- [Magnetism and cardiac arrhythmias - PubMed](#)
- [The influence of the call with a mobile phone on heart rate variability parameters in healthy volunteers - PubMed](#)
 - Low energy? The melanin one is crazy (melatonin too) - heart rate variability?
- [Resting blood pressure increase during exposure to a radio-frequency electromagnetic field - The Lancet](#)
- [Experimental evidence of a potentially increased thrombo-embolic disease risk by domestic electromagnetic field exposure - Caprani - 2004 - Bioelectromagnetics - Wiley Online Library](#)
 - Add nosebleeds to symptoms if this or the last one prove them?
- [Alteration of diurnal rhythms of blood pressure and heart rate to workers exposed to radiofrequency electromagnetic fields - PubMed](#)
- [Exposure of frog hearts to CW or amplitude-modulated VHF fields: selective efflux of calcium ions at 16 Hz - PubMed](#)
- [Human head exposure to a 37 Hz electromagnetic field: Effects on blood pressure, somatosensory perception, and related parameters - Ghione - 2004 - Bioelectromagnetics - Wiley Online Library](#)
-

Reproductive / Erectile dysfunction/Fetus

- [Cell phone usage and erectile function - PubMed](#)
- [Lifestyle Risk Factors Associated with Threatened Miscarriage: A Case-Control Study](#)
- [Effects of fetal microwave radiation exposure on offspring behavior in mice - PMC](#)
- [The effects of long-term exposure to a 2450 MHz electromagnetic field on growth and pubertal development in female Wistar rats - PubMed](#)
- [Use of mobile phone during pregnancy and the risk of spontaneous abortion - PubMed](#)
- [Epidemiological investigation of risk factors of the pregnant women with early spontaneous abortion in Beijing - PubMed](#)
- [Use of laptop computers connected to internet through Wi-Fi decreases human sperm motility and increases sperm DNA fragmentation - PubMed **](#)
- [Effect of mobile telephones on sperm quality: a systematic review and meta-analysis - PubMed **](#)
- [Effects of Wi-Fi \(2.45 GHz\) Exposure on Apoptosis, Sperm Parameters and Testicular Histomorphometry in Rats: A Time Course Study - PMC](#)
- [Radio frequency electromagnetic radiation \(RF-EMR\) from GSM \(0.9/1.8GHz\) mobile phones induces oxidative stress and reduces sperm motility in rats](#)
- [Effect of long-term exposure of 2.4 GHz radiofrequency radiation emitted from Wi-Fi equipment on testes functions - PubMed](#)

- [Low frequency electromagnetic fields long-term exposure effects on testicular histology, sperm quality and testosterone levels of male rats - ScienceDirect](#)
- [Effect of electromagnetic field exposure on the reproductive system - PMC](#)
 - At the cellular level emfs cause
 - Calcium channel effects (leukemia, cell growth inhibition, dna break)
 - Oxidative stress and ROS generation
 - Protein misfolding
 - And heat shock protein stuff
 - Footnotes in figure 2 lead to a bunch more papers
- [Effect of electromagnetic field exposure on the reproductive system - PMC](#)
 - Already have, but looks like a different set of sub-citations are used? Maybe come back
- [Testicular apoptosis and histopathological changes induced by a 2.45 GHz electromagnetic field - PubMed](#)
- [Biophysical evaluation of radiofrequency electromagnetic field effects on male reproductive pattern - PubMed](#)
- [Effect of high-frequency electromagnetic fields on trophoblastic connexins - PubMed](#)
- [Evidence for mobile phone radiation exposure effects on reproductive pattern of male rats: role of ROS - PubMed](#)
- [\[High-frequency electromagnetic field exposure on reproductive and endocrine functions of female workers\] - PubMed \(eh\)](#)
- [Effects of the Exposure to Mobile Phones on Male Reproduction: A Review of the Literature](#)
- [Influence of electromagnetic fields on reproductive system of male rats](#)
- [RF radiation-induced changes in the prenatal development of mice - PubMed](#)
- [Proteomic analysis on the alteration of protein expression in the early-stage placental villous tissue of electromagnetic fields associated with cell phone exposure - PubMed](#)
- [\(PDF\) Effects of thirty minute mobile phone irradiation on morphological and physiological parameters and gene expression in pregnant rats and their fetuses](#)
 - *** the fetus picture
-
- [Preliminary study on the induction of sperm head abnormalities in mice, Mus musculus, exposed to radiofrequency radiations from global system for mobile communication base stations - PubMed](#)
- [Effect of long-term exposure of 2.4 GHz radiofrequency radiation emitted from Wi-Fi equipment on testes functions](#)
- [Immunohistopathologic demonstration of deleterious effects on growing rat testes of radiofrequency waves emitted from conventional Wi-Fi devices - PubMed](#)
- [Mobile Phone Radiation Induces Reactive Oxygen Species Production and DNA Damage in Human Spermatozoa In Vitro | PLOS One](#)
- [900 MHz pulse-modulated radiofrequency radiation induces oxidative stress on heart, lung, testis and liver tissues](#)
- <https://www.emf-portal.org/en/article/26969>

- [The effect of pulsed 900-MHz GSM mobile phone radiation on the acrosome reaction, head morphometry and zona binding of human spermatozoa - PubMed](#)
- [Effect of mobile telephones on sperm quality: A systematic review and meta-analysis - ScienceDirect](#)
- [Effects of the exposure to mobile phones on male reproduction: a review of the literature - PubMed](#)
- [Pathophysiology of cell phone radiation: oxidative stress and carcinogenesis with focus on male reproductive system - PMC](#)
- [Mobile phones affect multiple sperm quality traits: a meta-analysis - PMC](#)
- [Association between mobile phone use and semen quality: a systemic review and meta-analysis - PubMed](#)
- [The effects of radiofrequency electromagnetic radiation on sperm function - PubMed](#)
- [Use of laptop computers connected to internet through Wi-Fi decreases human sperm motility and increases sperm DNA fragmentation - Fertility and Sterility](#) this is the “4 hours of a laptop makes 25% of sperm useless” paper?
- [Effects of radiofrequency electromagnetic waves \(RF-EMW\) from cellular phones on human ejaculated semen: an in vitro pilot study - ScienceDirect](#)
- [Impact of microwave at X-band in the aetiology of male infertility - PubMed](#)
- [RF radiation-induced changes in the prenatal development of mice - PubMed](#)
- [Effects of 2.45 GHz microwave radiation and heat on mouse spermatogenic epithelium - PubMed](#)
- [Use of laptop computers connected to internet through Wi-Fi decreases human sperm motility and increases sperm DNA fragmentation - PubMed](#)
- [Bone morphogenetic protein expression in newborn rat kidneys after prenatal exposure to radiofrequency radiation - PubMed](#) - does this show effects persist after pregnancy?
- [Effect of cell phone usage on semen analysis in men attending infertility clinic: an observational study - PubMed](#)
- [Effects of prenatal exposure to a 900 MHz electromagnetic field on 60-day-old rat testis and epididymal sperm quality - PubMed](#)
- [The Effects of 900 Megahertz Electromagnetic Field Applied in the Prenatal Period on Spinal Cord Morphology and Motor Behavior in Female Rat Pups](#)
- [www.tandfonline.com/doi/abs/10.3109/09553002.2015.1031850](#)
- [Full article: Pathological effects of prenatal exposure to a 900 MHz electromagnetic field on the 21-day-old male rat kidney](#)
- [The effects of prenatal exposure to a 900-MHz electromagnetic field on the 21-day-old male rat heart - PubMed](#) - Most of these last few by the same lab.

Children/ behavior

- [Mobile phone use and health symptoms in children - PubMed](#)
 - Pretty mild and equivocal
- [Mobile phones, radiofrequency fields, and health effects in children--epidemiological studies - PubMed](#)
- [Prenatal and postnatal exposure to cell phone use and behavioral problems in children - PubMed](#)

- [Cell phone use and behavioural problems in young children - PubMed](#)
 - Weak epidemiological papers eh
- [Neurobehavioral effects among inhabitants around mobile phone base stations - PubMed](#) eh might have something?
- [The effect of electromagnetic radiation in the mobile phone range on the behaviour of the rat](#)
- [GSM base stations: short-term effects on well-being - PubMed](#)
- [Effects of Global Communication system radio-frequency fields on Well Being and Cognitive Functions of human subjects with and without subjective complaints](#)
- [Food collection and response to pheromones in an ant species exposed to electromagnetic radiation](#)
- <https://pubmed.ncbi.nlm.nih.gov/12125273/>
- [Mobile Phone Use, Blood Lead Levels, and Attention Deficit Hyperactivity Symptoms in Children: A Longitudinal Study | PLOS One](#)
- [Exposure to radio-frequency electromagnetic fields and behavioural problems in Bavarian children and adolescents epidem.](#)
- [Does exposure to environmental radiofrequency electromagnetic fields cause cognitive and behavioral effects in 10-year-old boys? - PubMed](#)
- [Motor and psychological functions of school children living in the area of the Skrunda Radio Location Station in Latvia - PubMed](#)
- [Fetal Radiofrequency Radiation Exposure From 800-1900 Mhz-Rated Cellular Telephones Affects Neurodevelopment and Behavior in Mice | Scientific Reports](#)
- [Mobile phone effects on children's event-related oscillatory EEG during an auditory memory task](#)
- [Cell phone use and behavioural problems in young children epidem.](#)
- [Yes the Children Are More Exposed to Radiofrequency Energy From Mobile Telephones Than Adults | IEEE Journals & Magazine](#)
- [Exposure Limits: The underestimation of absorbed cell phone radiation, especially in children](#)
- [GSM 900 MHz radiation inhibits ants' association between food sites and encountered cues](#)
- [The role of inflammation and microglial activation in the pathophysiology of psychiatric disorders - PubMed](#)
- <https://link.springer.com/article/10.1186/1476-069X-7-54>
- [Mobile telephone use is associated with changes in cognitive function in young adolescents - PubMed](#)
-

Depression / mental health

- [Microwave frequency electromagnetic fields \(EMFs\) produce widespread neuropsychiatric effects including depression - PubMed](#)
- [Electromagnetic field exposure-induced depression features could be alleviated by heat acclimation based on remodeling the gut microbiota - ScienceDirect](#)
 - Not the right paper, but completely random?

- [Exposure to electromagnetic fields and suicide among electric utility workers: a nested case-control study - PubMed](#)
- [Chronic exposure to ELF fields may induce depression - PubMed](#)
- [Suicide and sleep: Is it a bad thing to be awake when reason sleeps? - PubMed](#) (does this belong here?)
- [Mobile phone use and stress, sleep disturbances, and symptoms of depression among young adults--a prospective cohort study - PubMed](#)
 - Eh, low quality data?
- [Computer use and stress, sleep disturbances, and symptoms of depression among young adults--a prospective cohort study - PubMed](#)
 - Eh- also, do I have this one?
- [Magnetic fields of transmission lines and depression - PubMed](#)
- [Depressive symptoms and headaches in relation to proximity of residence to an alternating-current transmission line right-of-way - PubMed](#)
- [Environmental Power-frequency Magnetic Fields and Suicide : Health Physics](#)
- [Exposure to electromagnetic fields and suicide among electric utility workers: a nested case-control study - PMC](#)
- [Power frequency magnetic field; depressive illness and myocardial infarction - PubMed](#) (eh why not heart problems?)
-

Endocrine/energy systems/Fatigue

- [900 MHz electromagnetic field exposure affects qualitative and quantitative features of hippocampal pyramidal cells in the adult female rat - PubMed](#)
- [Effects of chronic exposure to radiofrequency electromagnetic fields on energy balance in developing rats - PubMed](#) energy balance?
- [Effects of exposure to GSM mobile phone base station signals on salivary cortisol, alpha-amylase, and immunoglobulin A - PubMed](#)
- [Effects of 900 MHz electromagnetic field on TSH and thyroid hormones in rats - PubMed](#)
- [In Vitro Exposure to Electromagnetic Fields: Changes in Tumour Cell Properties](#)

obesity/diabetes/blood sugar

- [A prospective study of in-utero exposure to magnetic fields and the risk of childhood obesity - PubMed](#)
 - Basically doubles/triples obesity?** why is this one so much higher
- [Dirty electricity elevates blood sugar among electrically sensitive diabetics and may explain brittle diabetes - PubMed](#)
 - [Dirty Electricity and Electrical Hypersensitivity: Five Case Studies](#)
 - [Electromagnetic hypersensitivity: biological effects of dirty electricity with emphasis on diabetes and multiple sclerosis - PubMed](#)
- [Dirty Electricity Elevates Blood Sugar Among Electrically Sensitive Diabetics and May Explain Brittle Diabetes - PMC](#)

- [The Effects of Long-Term Exposure of Magnetic Field via 900-MHz GSM Radiation on Some Biochemical Parameters and Brain Histology in Rats - PubMed](#)
 - This one too? (haven't read)

melatonin/sleep

- [Pineal melatonin level disruption in humans due to electromagnetic fields and ICNIRP limits - PubMed](#)
- [Non-thermal continuous and modulated electromagnetic radiation fields effects on sleep EEG of rats - PubMed](#)
- [Circadian Rhythmicity of Antioxidant Markers in Rats Exposed to 1.8 GHz Radiofrequency Fields - PMC](#)
- [The Melatonin Hypothesis: Electric Power and Breast Cancer - PubMed](#)
 - Kind of speculative theory involving melatonin?
- [Sleep EEG alterations: effects of pulsed magnetic fields versus pulse-modulated radio frequency electromagnetic fields - PubMed](#)
- [Non-thermal continuous and modulated electromagnetic radiation fields effects on sleep EEG of rats - ScienceDirect](#)
- [Radio frequency electromagnetic field exposure in humans: Estimation of SAR distribution in the brain, effects on sleep and heart rate - PubMed](#)
- [Electromagnetic fields, such as those from mobile phones, alter regional cerebral blood flow and sleep and waking EEG - PubMed](#)
- [Exposure to pulsed high-frequency electromagnetic field during waking affects human sleep EEG](#)
- <https://www.emf-portal.org/en/article/758>
- [Sleep after mobile phone exposure in subjects with mobile phone-related symptoms](#)
- [Sleep EEG alterations: effects of pulsed magnetic fields versus pulse-modulated radio frequency electromagnetic fields - PubMed](#)
- **Does melatonin really go to 0??**
- [Effects of everyday radiofrequency electromagnetic-field exposure on sleep quality: a cross-sectional study - PubMed](#)
- [Subjective symptoms, sleeping problems, and cognitive performance in subjects living near mobile phone base stations - PMC](#)
- <https://www.emf-portal.org/en/article/9887>
- [Radio frequency electromagnetic field exposure in humans: Estimation of SAR distribution in the brain, effects on sleep and heart rate](#)
- [EMR Reduces Melatonin in Animals and People](#) pall claims that emfs reduce melatonin to 0? Can I prove that? Does this provide evidence? This is a review of all the papers? **
* review
- [Geomagnetic activity and human melatonin metabolite excretion - PubMed](#) eh, this is kinda beyond the pall (ha ha), but still interesting?
- [Melatonin suppression by static and extremely low frequency electromagnetic fields: relationship to the reported increased incidence of cancer - PubMed](#)
- [Evidence for an effect of ELF electromagnetic fields on human pineal gland function - PubMed](#)- eh here or hormone? (or brain?)

- [Nocturnal excretion of a urinary melatonin metabolite among electric utility workers - PubMed](#)
- [Melatonin metabolite excretion among cellular telephone users - PubMed](#)
-
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brain/headaches/head/random symptoms

- [Effects of prenatal exposure to a 900 MHz electromagnetic field on the dentate gyrus of rats: a stereological and histopathological study - PubMed](#)
- [The effects of 884 MHz GSM wireless communication signals on headache and other symptoms: an experimental provocation study - PubMed](#)
- [Tinnitus and cell phones: the role of electromagnetic radiofrequency radiation - PubMed](#)
- [Erythema ab igne - PubMed](#)
- [Laptop induced erythema ab igne - PubMed](#)
- [Laptop-induced erythema ab igne: Report and review of literature - PubMed](#)
- [Effects of Cell Phone Radiofrequency Signal Exposure on Brain Glucose Metabolism | Medical Devices and Equipment | JAMA](#)
 - brain changes - metabolism? PET?
 - [Cell phone radiofrequency radiation exposure and brain glucose metabolism - PubMed](#)
 - a follow up? Good? Bad?
- Brain damage from cell phones/emfs?
 - [Maternal mobile phone exposure alters intrinsic electrophysiological properties of CA1 pyramidal neurons in rat offspring - PubMed](#)
 - [Behavior and memory evaluation of Wistar rats exposed to 1.8 GHz radiofrequency electromagnetic radiation - PubMed](#)
 - [Analysis of emotionality and locomotion in radio-frequency electromagnetic radiation exposed rats - PubMed](#)
 - [Effect of radio-frequency electromagnetic radiations \(RF-EMR\) on passive avoidance behaviour and hippocampal morphology in Wistar rats - PubMed](#)
 - [Evaluation of Oxidant Stress and Antioxidant Defense in Discrete Brain Regions of Rats Exposed to 900 MHz Radiation](#)
- [Blood Brain Barrier: The Role of Calcium Homeostasis - PMC](#)
 - Calcium in blood brain barrier? (eh)
- [Local cerebral blood flow after microwave exposure - PubMed](#)
- [The effect of electromagnetic radiation on the rat brain: an experimental study - PubMed](#)
 - This one seems really solid?
- [Mobile Phone Affects Cerebral Blood Flow in Humans - Sargo Aalto, Christian Haarala, Anna Brück, Hannu Sipilä, Heikki Hämäläinen, Juha O Rinne, 2006](#)
- [Pathophysiology of microwave radiation: effect on rat brain - PubMed](#)
 - Seems good? Like with the glyphosate papers, I have to start measuring reasonable doses (start with “safe” standards in the stupid books?)
 - But still, if these are allegedly safe at all doses, it’s not a question whether “realistic” dose matters that much

- [Effects of cell phone radiofrequency signal exposure on brain glucose metabolism - PubMed](#)
- [GSM mobile phone radiation suppresses brain glucose metabolism - PubMed](#)
- [\[A Case-Control Study on the Risk Factors of Alzheimer's Disease in Military Elderly Men\] - PubMed](#)
 - This allegedly has something electrical as a risk factor? (seems kinda weak)
- [Risk factors for Alzheimer disease: a population-based case-control study in Istanbul, Turkey - PubMed](#)
 - This one too? Electric blankets? (seems kinda weak)
- [Cognitive impairment in rats after long-term exposure to GSM-900 mobile phone radiation - PubMed](#)
- [Elevated risk of Alzheimer's disease among workers with likely electromagnetic field exposure | Neurology](#)
 - Random follow ups/related papers below? Some of these seem like they're really getting mechanisms/ really getting into things
 - [Long-term exposure to magnetic fields and the risks of Alzheimer's disease and breast cancer: Further biological research - PubMed](#)
 - [Occupational exposure to electromagnetic fields and risk of Alzheimer's disease - PubMed](#)
- [Electrical occupations and neurodegenerative disease: analysis of U.S. mortality data - PubMed](#)
- [The Effects of Long-Term Exposure of Magnetic Field via 900-MHz GSM Radiation on Some Biochemical Parameters and Brain Histology in Rats - PubMed](#)
 - Already have, but shows pretty significant blood glucose effects?
- [Effects of 30-min mobile use on selected brain function tests in female medical students](#)
 - Eh random one I found
- [Biochemical modifications and neuronal damage in brain of young and adult rats after long-term exposure to mobile phone radiations - PubMed](#) (here or youth?)
- [Headaches from cellular telephones: are they real and what are the implications? - PubMed](#)
- [Cognitive impairment in rats after long-term exposure to GSM-900 mobile phone radiation](#)
- [The effect of pulsed electromagnetic radiation from mobile phone on the levels of monoamine neurotransmitters in four different areas of rat brain - PubMed](#)
- [Effects of low level electromagnetic field exposure at 2.45 GHz on rat cornea - PubMed](#)
- [Effect of 900 MHz Radio Frequency Radiation on Beta Amyloid Protein, Protein Carbonyl, and Malondialdehyde in the Brain](#)
- [Effects of low intensity radiofrequency electromagnetic fields on electrical activity in rat hippocampal slices - PubMed](#)
- [900 MHz electromagnetic field exposure affects qualitative and quantitative features of hippocampal pyramidal cells in the adult female rat - PubMed](#)
- [Brain proteome response following whole body exposure of mice to mobile phone or wireless DECT base radiation](#)

- [A study of neurotoxic biomarkers, c-fos and GFAP after acute exposure to GSM radiation at 900 MHz in the picrotoxin model of rat brains - PubMed](#)
- [GFAP expression in the rat brain following sub-chronic exposure to a 900 MHz electromagnetic field signal - PubMed](#)
- [EMF-Portal | \[Modification of clinically important neurotransmitters under the influence of modulated high-frequency fields - A long-term study under true-to-life conditions\]](#)
- [Effects of Cell Phone Radiofrequency Signal Exposure on Brain Glucose Metabolism - PMC](#)
- [The effects of long-term exposure of magnetic field via 900-MHz GSM radiation on some biochemical parameters and brain histology in rats - PubMed](#)
- [Effects of 2.4 GHz radiofrequency radiation emitted from Wi-Fi equipment on microRNA expression in brain tissue - PubMed](#)
- [GFAP expression in the rat brain following sub-chronic exposure to a 900 MHz electromagnetic field signal - PubMed](#) astrocytes?
- [Exposure to 60-Hz magnetic fields and proliferation of human astrocytoma cells in vitro - PubMed](#)
- [Biochemical changes in rat brain exposed to low intensity 9.9 GHz microwave radiation - PubMed](#)
- [Exposure to ELF-pulse modulated X band microwaves increases in vitro human astrocytoma cell proliferation - PubMed](#)
 - Astrocytes were a thing with glyphosate as well right?
 - (could be big?)
- [Electromagnetic radiation at 835 MHz changes the morphology and inhibits proliferation of a human astrocytoma cell line - ScienceDirect](#)
- [Mobile phones exposure induces changes of contingent negative variation in humans - PubMed](#)*** brain stuff *proves* that the cell phones have nonthermal effects
- [Effect of high SARs produced by cell phone like radiofrequency fields on mollusk single neuron - PubMed](#)
- [Purkinje Cell Number Decreases in the Adult Female Rat Cerebellum Following Exposure to 900 MHz Electromagnetic Field - PubMed](#)
- [Residence near power lines and mortality from neurodegenerative diseases: longitudinal study of the Swiss population - PubMed](#) - should I put ALS in brain section?
- [Association between occupational exposure to power frequency electromagnetic fields and amyotrophic lateral sclerosis: a review - PubMed](#) ooh a review? (other papers cited in this chapter about ALS) - **als isn't quite autoimmune, but close**
- [Electromagnetic fields and health effects--epidemiologic studies of cancer, diseases of the central nervous system and arrhythmia-related heart disease - PubMed](#) - also ALS?
- [Occupations with exposure to electromagnetic fields: a possible risk factor for Alzheimer's disease - PubMed](#)
- [Magnetic field exposure and neurodegenerative disease mortality among electric utility workers - PubMed](#)
- [Mortality from amyotrophic lateral sclerosis, other chronic disorders, and electric shocks among utility workers - PubMed](#)

- [Neurodegenerative diseases in welders and other workers exposed to high levels of magnetic fields - PubMed](#) **
- [Occupational exposure to electromagnetic fields and risk of Alzheimer's disease - PubMed](#)
- [Potential occupational risks for neurodegenerative diseases - PubMed](#) (60 hz at the end)
- [Occupational exposure to extremely low frequency electric and magnetic fields and Alzheimer disease: a meta-analysis - PubMed](#)
- [Neural function and behavior: defining the relationship - PubMed](#)
- [Effects of radiofrequency radiation emitted by cellular telephones on the cognitive functions of humans - PubMed](#) here or behavior stuff?
- [Cognitive impairment in rats after long-term exposure to GSM-900 mobile phone radiation - PubMed](#) - already have but in 2008 the rats had memory deficits after 2 hours of cell phone exposure a week for 1 year. (memory loss)
- [Deleterious Impacts of a 900-MHz Electromagnetic Field on Hippocampal Pyramidal Neurons of 8-week-old Sprague Dawley Male Rats - PubMed](#)
 - Cell phones like radiation one hour a day, rats had had 10% fewer brain cells in hippocampus? Other cells were abnormal dark and shrunken, just like salford's?
 - [Maternal exposure to a continuous 900-MHz electromagnetic field provokes neuronal loss and pathological changes in cerebellum of 32-day-old female rat offspring - PubMed](#) another sahin study, could be good.
- [\(PDF\) Pyramidal Cell Loss in the Cornu Ammonis of 32-day-old Female Rats Following Exposure to a 900 Megahertz Electromagnetic Field During Prenatal Days 13-21](#)
 - One hour a day of cell phone exposure for 9 days had changes in brains spinal cords hears kidney livers spleens thymusses and testes? (might have a couple elsewhere). Myelin in one of these too
- [The Effects of Prenatal Exposure to a 900 Megahertz Electromagnetic Field on Hippocampus Morphology and Learning Behavior in Rat Pup](#)
- [Associations Between Screen-Based Media Use and Brain White Matter Integrity in Preschool-Aged Children | Pediatrics](#)
 - Screens damage white matter of the brain? White matter = nerve fibers and myelinated sheaths?
-
-

Tinnitus/Ears

- [Tinnitus and mobile phone use - PubMed](#)
- [Effects of intensive and moderate cellular phone use on hearing function - PubMed](#)
 - This one may have found no effect
- [High-frequency hearing loss among mobile phone users - PubMed](#)
 - [Audiologic disturbances in long-term mobile phone users. | Semantic Scholar](#)
 - These two may have found slightly more effect?
- [Auditory brainstem response changes during exposure to GSM-900 radiation: an experimental study - PubMed](#)
- [Auditory Brainstem Responses and EMFs Generated by Mobile Phones - PubMed](#)

- Can't tell if these two are good or bad
- https://journals.physiology.org/doi/abs/10.1152/jappl.1962.17.4.689?_cf_chl_f_tk=L6zXDZqx5fOxsWvs4u4lbB4Vo2rA_ZkKBYNnxRn9f10-1783147099-1.0.1.1-MywzNWU9WOc1_5bTXTgHy8VjllEr5FoSuWdA5LjgC8U
- [Hearing of microwave pulses by humans and animals: effects, mechanism, and thresholds - PubMed](#)
- [Auditory changes in mobile users: is evidence forthcoming? - PubMed](#) (firstenberg)
 - [Study of effects of cell phone on Ear, journal of International Research in Medical and pharmaceutical sciences,UK, july2015, issue:1, Vol.5,6-23](#)
 - [STUDY OF EFFECTS OF CELL PHONE ON EAR - Archive ouverte HAL](#) - one of these two maybe shows that talking on a phone for 10 minutes a day can lead to deafness? Ehf
- [Tinnitus and mobile phone use | Occupational & Environmental Medicine](#)
 - Already have somewhere, but the more time someone spends on their cell phone, the more tinnitus they get? Seems like rock solid research.
 - We can't do these type of tests anymore, since everyone is strong users.
- [Overview of power-line radiation and its coupling to the ionosphere and magnetosphere | Space Science Reviews | Springer Nature Link](#) - firstenberg
 - Kikuchi found power grid radiating basically a continues spectrum from 50hz to 100 mhz (as far as 1km from low and high power lines)
 - [Power line transmission and radiation | Space Science Reviews | Springer Nature Link](#)
 - Frequencies up to 10khz are measured by satellites? (haven't read the details, and not sure which paper is which.)
 - ***** this stuff seems really important. SO nice to have actual science**
- [Radiofrequency exposure near high-voltage lines - PMC](#)
 - Something about radio frequency emissions 150 feet(50 m) from power lines, between 110 and 370 khz, caring amplitude modulated, information carrying waves?
 - Italian utility companies put thee on intentionally?"
- [', WEISKE, Clarence W. "Human Sensitivity to Electric Fields A , Biomedical Sciences Instrumentation, Vol.I, ' . EF](#) -firstenberg (is this good?)
 - 80 million (¼) americans has tinnitus? (maybe cite this book, might not be in paper)
 - First tinnitus from electricity 277?
- [Ultrasonic hearing in humans: applications for tinnitus treatment - PubMed](#) -firstenberg
 - **"So outlandish is the concept that humans can have the hearing range of specialized mammals, such as bats and toothed whales... that ultrasonic hearing has generally been relegated to the realm of parlor ricks rather than being considered the subject of scientific inquiry." - Martin Lenhardt**
 - Double check that this quote is in here(haven't read yet)
 - Ultrasonic hearing has been discover more than a dozen times since the 1940s? (firstenberg)
 - More stories/papers on page 298

- Is this actual emfs or just a tinnitus paper

Skin/eyes/nose/burning

- [Skin changes in patients claiming to suffer from "screen dermatitis": a two-case open-field provocation study - PubMed](#) (eh?)
 - [Electrohypersensitivity: Observations in the Human Skin of a Physical Impairment by Olle Johansson, associate professor The Expe](#) not sure if this is the right follow up
 - [Cutaneous mast cells are altered in normal healthy volunteers sitting in front of ordinary TVs/PCs--results from open-field provocation experiments - PubMed](#)
 - [A theoretical model based upon mast cells and histamine to explain the recently proclaimed sensitivity to electric and/or magnetic fields in humans - ScienceDirect](#)
- [Prevention of mobile phone induced skin tissue changes by melatonin in rat: an experimental study - PubMed](#)
- [Effects of electromagnetic radiation from a cellular telephone on epidermal Merkel cells - PubMed](#)
 - Does this affect clotting/nosebleeds/hippocampus? Haven't read
 - Add nosebleeds to symptoms if this or the next one prove them?
- Kinda weak, but some studies on eyes and cell phones?
 - [Cataracts induced by microwave and ionizing radiation - PubMed](#)
 - [Non-thermal electromagnetic radiation damage to lens epithelium - PubMed](#)
 - [Effects of mobile phones on oxidant/antioxidant balance in cornea and lens of rats - PubMed](#)
 - [Effects of computer monitor-emitted radiation on oxidant/antioxidant balance in cornea and lens from rats - PMC](#)
 - [A simulation for effects of RF electromagnetic radiation from a mobile handset on eyes model using the finite-difference time-domain method - PubMed](#)
 - Mechanism is oxidation damage to lens and cornea? If oxidation is the main mechanism, this would explain the rise in melanoma/skin issues too
- [The effects of 2100-MHz radiofrequency radiation on nasal mucosa and mucociliary clearance in rats - PubMed](#)
- [Transient microwave induced neurosensory reactions during superficial hyperthermia treatment - PubMed](#)
 - Looks really weak?
 - Looks promising?
- <https://www.akjournals.com/view/journals/036/98/2/article-p157.xml>
 - Possible?
 - [FM-radio and TV tower signals can cause spontaneous hand movements near moving RF reflector - PubMed](#) follow up?
- [Low power density microwave radiation induced early changes in rabbit lens epithelial cells - PubMed](#)
 - Blindness? Tied to another with glaucoma right? Are glaucoma rates rising?

- [Enhancement of allergic skin wheal responses by microwave radiation from mobile phones in patients with atopic eczema/dermatitis syndrome - PubMed](#)
 - They cause eczema

Lifespan/reaction time

- [Electromagnetic field therapy delays cellular senescence and death by enhancement of the heat shock response - PubMed](#)
 - Mouse fibroblasts exposed to radio waves (50 mhz, 0.5 watts) for somewhere between 0 and 30 minutes. Lifespan increased from 118 to 138 days? That would be 16% longer. $71 \times 1.16 = 82$, so this *could* potentially explain a huge part of our increased longevity.
- [Effect of a continuous gamma irradiation at a very low dose on the life span of mice - PubMed](#) eh
 - [Single extreme low dose/low dose rate irradiation causes alteration in lifespan and genome instability in primary human cells - PubMed](#)
 - <https://ieeexplore.ieee.org/document/8163981>
- [Interaction Effects of Environmental Stress and Deuteron Irradiation of The Brain on Mortality and Longevity of C57BL/10 Mice.* - J. M. Ord, T. Samorajski, W. Zeman, H. J. Curtis, 1967](#)
 - Electric shock increased the lifespan of mice?
- [Effects of 800-MHz electromagnetic radiation on body weight, activity, hematopoiesis and life span in mice - PubMed](#)
 - “Twenty-four of the mice were irradiated at a power level of 43 milliwatts per square centimeter for two hours a day, five days a week, for three years. This is a huge exposure that is powerful enough to produce internal burns. And indeed four of the mice died from burn injuries. A fifth mouse became so obese that it could not be extracted from the exposure compartment and it died there. But the mice that weren't directly killed by the experiment lived a long time-
 - -on average, 19 days longer than the unexposed mice.” - firstenberg’s summary; huh
- [Electromagnetic field therapy delays cellular senescence and death by enhancement of the heat shock response - PubMed](#)
 - **“Süsskind only exposed mice for four and a half minutes at a time. He irradiated one hundred mice for 59 weeks, five days per week for four and a half minutes a day at a power density of 109 milliwatts per square centimeter. Some of the irradiated mice, which subsequently died, developed extraordinarily high white blood cell counts, and had enlarged lymphoid tissue and enormous liver abscesses. Testicular degeneration occurred in 40 percent of the irradiated mice, and 35 percent developed leukemia. However, the unirradiated mice, although they were much healthier, did not live as long. After 15 months, half the control mice were dead, and only 36 percent of the irradiated ones.” - firstenberg**
 - So what is the *actual* effect on lifespan from emfs?(calculated in the chapter?

- Chou and guy showed that low level of irradiation (.4 watts/kg) quadrupled the tumors, but they lived 25 days longer? Again, these are *huge* implications
 - [Pioneering Safety: UW ECE alum Chung-Kwang "C-K." Chou receives IEEE Standards Association Lifetime Achievement Award](#)
 - [Long-term, low-level microwave irradiation of rats - Chou - 1992 - Bioelectromagnetics - Wiley Online Library](#) - this seems like a follow up, but worth reading
- Frequencies below 8 hz slow reaction time, frequencies above 8hz quicken it?
 - later paper allegedly shows that *tiny* differences (half a hz) can be distinguished by the body at extremely low signal strengths? (0.0038 V/m, whereas an iphone is somewhere around 1 V/m)
 - <https://www.tandfonline.com/doi/pdf/10.1080/09291017109359276>
 - [ELF and VLF Signal Properties: Physical Characteristics | Springer Nature Link](#)
 - [Behavioural Changes in Human Subjects Associated with ELF Electric Fields | Springer Nature Link](#)
 - [Whistlers and Related Ionospheric Phenomena – Dover Publications](#)
 - <https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/JA079i016p02511> -one more by this guy but skip?
- Study was in german, but here are other ones by reiter?
 - [The electric potential of the ionosphere as controlled by the solar magnetic sector structure. Result of a study over the period of a solar cycle - ScienceDirect](#)
 - [Electromagnetic Fields \(EHC 137, 1992\)](#)
 - [Effects of Long-Term Radiofrequency Radiation on Immunological Competence and Metabolism.](#)
 - <https://www.iamas.org/icae/wp-content/uploads/sites/10/2022/03/Volume-4-No.1-May-1993.pdf>

Schuman Resonance/power line harmonics/ electrical envelope

Eh kinda wacky shit

- Schumann and konig provide schuman resonance in 1953? (worth adding?)
 - [Über die Beobachtung von "atmospherics" bei geringsten Frequenzen | The Science of Nature](#) original paper, but in german
 - Alpha rhythm is 8-13 hz in adults, 7-13 in newborns? These are bounded by the first two of the schumann resonances? (8 and 14 hz; full sequence is 8,14,20,26,32 - why are they not multiples like harmonics?)
 - Animals allegedly show the same (do I care? I can find the studies myself if I need to)
 - [ELI5: Schumann resonances : r/explainlikeimfive](#) eh (mine to understand)
- Two random schumann resonance papers that seem really promising (last two I found, first two were firstenberg)
 - [Schumann resonance frequency variations during sudden ionospheric disturbances - ScienceDirect](#) ****
 - [Schumann Resonances, a plausible biophysical mechanism for the human health effects of Solar | Natural Hazards](#) ***

- [Exploring the influence of Schumann resonance and electromagnetic fields on bioelectricity and human health - PubMed](#)
- [The Impact of the Schumann Resonances on Human and Mammalian Physiology Ground-based Investigations to Support Human](#)
-
- [Transmitter simulation of power line radiation effects in the magnetosphere - Park - 1978 - Geophysical Research Letters - Wiley Online Library](#)
 - **“Power line effect.”** -same idea as the pages above
- [Electromagnetic emission at micron wavelengths from active nerves - PubMed](#)
 - Is this something or nothing? Completely random.
- Power line harmonics. Something about a whole world of crackles drowned out, but right now I don't care that much.
 - **“It seems likely that the entire hiss band is caused by power line radiation,” wrote Helliwell in 1975.”**
- <https://royalsocietypublishing.org/rstb/article-abstract/279/963/213/53988/Atmospheric-sciences-Active-very-low-frequency?redirectedFrom=fulltext>
 - [Air/Undersea Communication at Ultra-Low-Frequencies Using Airborne Loop Antennas](#)
 - shows that the ionosphere has been effected? Are they actually *radiating* the ionosphere, or just bouncing off of it the way radio does?
 - Some sort of cyclotron effect?
- <https://ieeexplore.ieee.org/document/1092229>
 - signal from quebec amplified a thousand fold on it's return trip? Only half a watt necessary for detection? Something about multiples of 60 hz?
 - **“Methods involving the modulation of ionospheric conductivity include the injection of plasma clouds into the ionosphere and heating of the lower region with powerful radio transmitters.**
 - **“Methods involving nonlinear processes in the magnetosphere”**
- More in section d about the pulsation changing on weekdays vs weekends.
 - *actually* gets into this though, claiming that the “van allen belt” has an “electron slot” from electrons drained by interacting with power lines?
 - [Satellite observations of power line harmonic radiation | Space Science Reviews | Springer Nature Link](#)
 - [Unintentional man-made modification effects in the magnetosphere - ScienceDirect](#) *** (probably the best one? How do we see what “enough” is to end the electric field?)
 - [Active Precipitation of Radiation Belt Electrons Using Rocket Exhaust Driven Amplification \(REDA\) of Man-Made Whistlers - PMC](#)
 - [Schumann resonance frequency variations during sudden ionospheric disturbances - ScienceDirect](#)
 - <https://ui.adsabs.harvard.edu/scan/manifest/1983SSRv...35..139T>
- Random ones could be crap? (follow up above?)
 - [Active Precipitation of Radiation Belt Electrons Using Rocket Exhaust Driven Amplification \(REDA\) of Man-Made Whistlers - PMC](#)

- [Systematic investigation of power line harmonic radiation in near-Earth space above China based on observed satellite data](#)
- <https://ui.adsabs.harvard.edu/abs/1988emc..conf...43B/abstract>
- [Influence of electromagnetic fields on the circadian rhythm: Implications for human health and disease - ScienceDirect](#)
 - Random paper. Could be good for healing
 - But wait, the schumann resonance papers in the last chapter *prove* that we're electrical right?, that we need these fields, and therefore that similar fields can completely disrupt our bodies?
 - Can I use grounding to *prove* that emfs do damage? Does my story actually start with the body electric after all? **I make the damn thing sound obvious, not like we're shooting in the dark?**
 - **Or start with failed safety studies? The horrible "2 degrees brain warming" effect?**
- allege that radiation from powerlines overwhelms natural radiation from lightning. Since lightning charges our planet's battery, this could actually be a deep problem?
 - **If i can prove these are comparable to lighting strikes, that's a catastrophe right?**
 - <https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/GL004i007p00275>
 - [The Control of the Magnetosphere by Power Line Radiation](#)
 - [Ground observations of power line radiation coupled to the ionosphere and magnetosphere | Space Science Reviews | Springer Nature Link](#)
 - [Slot region electron precipitation by lightning, VLF chorus, and plasmaspheric hiss - Imhof - 1986 - Journal of Geophysical Research: Space Physics - Wiley Online Library](#)
 - <https://ui.adsabs.harvard.edu/abs/2000Ge%26Ae..40..388K/abstract>
 - **Compare this to the atmosphere igniting with the bomb.**

Ecology/Bees/Animal Navigation

- <https://www.tandfonline.com/doi/pdf/10.1080/0005772X.1976.11097592>
- [Colony Collapse Disorder: A Descriptive Study | PLOS One](#) (already have I think; maybe put paper repository section?)
- [Sick Bees Part 18C: Colony Collapse Revisited - Environmental Factors - Scientific Beekeeping](#)
- [Effects of radiofrequency electromagnetic radiation \(RF-EMF\) on honey bee queen development and mating success - ScienceDirect](#)
- [\(PDF\) Effect of Electromagnetic Radiation on Honey Bees \(eh?\)](#)
- [IMPACT OF ELECTROMAGNETIC RADIATION ON THE DENSITY OF HONEYBEES: A CASE STUDY](#)
- [Impact of mobile phones on the density of honeybees](#)
- [Exposure to cell phone radiations produces biochemical changes in worker honey bees - PMC](#)
- [Varroa mites and honey bee health: can Varroa explain part of the colony losses? | Apidologie](#)

- [Full text of "Animal orientation and navigation" \(eh\)](#)

Liver, bowels, etc

- [Mobile phone radiation-induced free radical damage in the liver is inhibited by the antioxidants N-acetyl cysteine and epigallocatechin-gallate - PubMed](#)
- [A new problem in inflammatory bladder diseases: use of mobile phones! - PubMed](#)
- [The effects of prenatal long-duration exposure to 900-MHz electromagnetic field on the 21-day-old newborn male rat liver - PubMed](#)
 - Rat liver”?

Synergy/MCS

- [Combined exposure of peripubertal male rats to the endocrine-disrupting compound atrazine and power-frequency electromagnetic fields causes degranulation of cutaneous mast cells: a new toxic environmental hazard? - PubMed synergy??](#)
- [Increased Release of Mercury from Dental Amalgam Fillings due to Maternal Exposure to Electromagnetic Fields as a Possible Mechanism for the High Rates of Autism in the Offspring: Introducing a Hypothesis - PubMed](#)
 - Oh wow emfs can make more mercury leech from amalgams? I didn't realize silver fillings also have mercury.
 - More on mercury ref 165-168? (plourde, eh??)
- [Reliable disease biomarkers characterizing and identifying electrohypersensitivity and multiple chemical sensitivity as two etiopathogenic aspects of a unique pathological disorder - PubMed](#)
- [A novel antioxidant agent caffeic acid phenethyl ester prevents long-term mobile phone exposure-induced renal impairment in rat. Prognostic value of malondialdehyde, N-acetyl-beta-D-glucosaminidase and nitric oxide determination - PubMed](#)
 - Probably bullshit?
 - [Comparative analysis of the protective effects of melatonin and caffeic acid phenethyl ester \(CAPE\) on mobile phone-induced renal impairment in rat | Molecular and Cellular Biochemistry | Springer Nature Link](#)

Theory/controversy

- [Building the gulf of opinions on the health and biological effects of electromagnetic radiation - PubMed](#) potentially good emf paper? (Eh, just skim. But other papers in the suggestions look good)
- <https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2025.1585441/full> ! eh just the fact that everything's polarized? Delete?
- [Cell biology and EMF safety standards - PubMed](#)
- [Global electromagnetic toxicity and frequency-induced diseases: Theory and short overview - PubMed](#)
 - Eh
- [Electromagnetic fields stress living cells - PubMed](#)

- Martin bland HSP70s? This guy seems worth researching more. (put in dna break section?)
- [Historical evidence that electrification caused the 20th century epidemic of "diseases of civilization" - PubMed](#) Eh, I have his book
- [Investigation of the spinal cord as a natural receptor antenna for incident electromagnetic waves and possible impact on the central nervous system - PubMed](#) (eh? Seems pretty wuwu)
- [A theoretical model based upon mast cells and histamine to explain the recently proclaimed sensitivity to electric and/or magnetic fields in humans - PubMed](#) -a theory of how this all works? (eh- also do I have this?)
- [Could myelin damage from radiofrequency electromagnetic field exposure help explain the functional impairment electrohypersensitivity? A review of the evidence - PubMed](#)
- [Extremely low frequency electromagnetic fields as effectors of cellular responses in vitro: possible immune cell activation - PubMed](#) - is this theory or is it crap?
- [Induction of cell activation processes by low frequency electromagnetic fields - PubMed](#) -decent review?

standards/safety reviews

- [Preface - An Evaluation of the U.S. Navy's Extremely Low Frequency Communications System Ecological Monitoring Program - NCBI Bookshelf](#) delete?
- [Electromagnetic fields and health: DNA-based dosimetry - PubMed](#) ***
- [Health risk assessment of electromagnetic fields: a conflict between the precautionary principle and environmental medicine methodology - PubMed](#)
 - Eh, probably hoaky job applying it?
 - [The Precautionary Principle](#)
 - Precautionary principle could be of value?
- [Wi-Fi – A Thalidomide in the Making. Who Cares?](#)
 - ** (maybe?)
- [Hypothesis on how to measure electromagnetic hypersensitivity - PubMed](#) -seems decent? Argues we're, marginalized and ignored/
 - [Review of possible modulation-dependent biological effects of radiofrequency fields - PubMed](#)
 - [Biological Effects of Electromagnetic Fields—Mechanisms for the Effects of Pulsed Microwave Radiation on Protein Conformation - ScienceDirect](#) - interesting mechanism?
 - [Interaction of stressors and the limits of cellular homeostasis - PubMed](#) -synergy? Could be crap
-

Books/further resources

- https://ncpha.government.bg/uploads/pages/3023/BGJPH_2015_02_S.pdf (random)
- <https://www.sciencedirect.com/science/article/pii/B9780815515890500015>
 - One of these discusses nonthermal effects?

- [3 Ways To Use Your Phone WITHOUT ZAPPING YOUR HEALTH](#) -almost certainly have the papers in here, but just in case
- [BIOLOGICAL EFFECTS OF ELECTRIC AND MAGNETIC FIELDS, VOLUME 1: SOURCES AND MECHANISMS Hardcover - 1994 - 1st Edition](#) (eh)

Challenging ones

- [Effects of 2.4 GHz radiofrequency radiation emitted from Wi-Fi equipment on microRNA expression in brain tissue](#)
- [The Microwave Syndrome: A Preliminary Study in Spain epidem.](#)
 - [The Microwave Syndrome: Further Aspects of a Spanish Study](#)
- [Effect of short-term 900 MHz low level electromagnetic radiation exposure on blood serotonin and glutamate levels](#)
- <https://www.emf-portal.org/en/article/2336>
- <https://www.emf-portal.org/en/article/15526>
- <https://www.emf-portal.org/en/article/28763>
- <https://www.emf-portal.org/en/article/30925>
- <https://www.emf-portal.org/en/article/17772>
- <https://www.emf-portal.org/en/article/248>
- <https://www.emf-portal.org/en/article/18544>
- <https://www.emf-portal.org/en/article/14198>
- <https://www.emf-portal.org/en/article/14046>
- <https://www.emf-portal.org/en/article/17645>
- www.emf-portal.org/en/article/1982
- <https://www.emf-portal.org/en/article/26571>
- <https://www.emf-portal.org/en/article/21031>
- <https://www.emf-portal.org/en/article/20303>
- <https://www.emf-portal.org/en/article/25628>
- [Radiation response of cell organelles - PubMed](#)
 - Organelles? Does this have anything to do with emfs per se?
- https://www.avaate.org/IMG/pdf/Craneo_Fragopoulou-Kousoulakos-Margaritis-2009.pdf
- [Acute effects of 30 minutes of exposure to a smartphone call on in vitro platelet function - PMC](#) this one too - platelets?
- [Monitoring dynamic reactions of red blood cells to UHF electromagnetic waves radiation using a novel micro-imaging technology - PubMed](#)
- [Influence of electromagnetic radiation produced by mobile phone on some biophysical blood properties in rats - PubMed](#)
 - Disturbs platelets? This “clumping” seems to be a consistent theme from EMFs.
- [\(PDF\) The Effects on Cells Mobility Due to Exposure to EMF Radiation](#) - this one is actually crazy crazy
- [Evaluation of the cytogenotoxic damage in immature and mature rats exposed to 900 MHz radiofrequency electromagnetic fields - PubMed](#)
- To read
 - [ElectricSense.com](#) (especially interviews?)

- [Cell Phone Radiation An Interview With Dr. Devra Davis | Green America](#)
- [Environmental Health Trust](#)
- [ElectricSense](#)
- [EMF Scientific Research - Important Studies - ElectricSense](#) research here
- [Microwave News](#)
- [Powerwatch](#)
- [Environmental Health Trust](#)
- <https://www.google.com/books/edition/Disconnect/wzk4k2FEopQC?hl=en&gbpv=1&dq=Disconnect:+The+Truth+about+Cell+Phone+Radiation+Devra+Davis&printsec=frontcover>
- <https://www.amazon.com/EMF-Practical-Guide-Inflammation-Electromagnetic-ebook/dp/B082Y7TCYG/> delete right?
- <https://www.amazon.com/dp/1401958753?lv=shuf&language=he&channelId=500&plpRedirect=mhFallback> delete?
- <https://repository.kulib.kyoto-u.ac.jp/server/api/core/bitstreams/30a8e693-6ea9-4c88-a1ca-6c910ed8fb4c/content> **
- [Martin Blank, Ph.D.](#) **
- [Dr. Magda Havas, Ph.D.](#) **
- https://www.researchgate.net/profile/Devra-Davis?_cf_chl_f_tk=WB0hGbP2AGIbn.ng4qRVtBRpDzCwJlws.fL3lPaRvr4-1783191235-1.0.1.1-fucOq2jzBOOUqREW6COeel6BeYKmegGzCVIb8NRs7Ng
- [004 // Dr. Anthony G. Beck - Rational Discussion on COVID-19 - The EMF Guy](#) eh? (can delete)
- [Alarming high EMFs measured in electric cars in German government study – JRS Eco Wireless](#) eh (could do more from this website, or delete)
- [Psychoenergetic Science: William A. Tiller Ph.D.: 9781424338634: Amazon.com: Books](#) eh could be something?
- [Energy Medicine: The Scientific Basis: 9780443067297: Oschman PhD, James L.](#) same?
- [Cross Currents: The Promise of Electromedicine, The Perils of Electropollution](#) huh didn't know about this one
- [Electromagnetic Fields: A Consumer's Guide to the Issues and How to Protect Ourselves](#) (eh)
- [Saturnine gout among Roman aristocrats. Did lead poisoning contribute to the fall of the Empire? - PubMed](#) random but interesting? (not emf)- add to facts?
- [Late lessons from early warnings: the precautionary principle 1896-2000 | Publications | European Environment Agency \(EEA\)](#) eh, this stuff is crap, but still keep?
- [The BioInitiative Report](#) want to delete, but this is lai's website?
- [Henry Lai – UW Bioengineering](#) (eh)
- [Biogenic magnetite as a basis for magnetic field detection in animals - ScienceDirect](#)
- [Magnetite in human tissues: A mechanism for the biological effects of weak ELF magnetic fields](#) (eh, maybe skip?)
- [Cell membranes: the electromagnetic environment and cancer promotion - PubMed](#)- is this vgccs?

- [Cell death induced by GSM 900-MHz and DCS 1800-MHz mobile telephony radiation - PubMed](#) - not sure which subsection to put this in
- [\(PDF\) Addiction to cell phones. Are there neurophysiological mechanisms involved?](#) kinda weak, but interesting idea that there might be an addiction
- https://bioinitiative.org/wp-content/uploads/pdfs/sec06_2007_Evidence_For_Genotoxic_Effects.pdf - huge report?
- [The effect of electromagnetic and magnetic fields on the central nervous system : Kholodov, Yu. A : Free Download, Borrow, and Streaming : Internet Archive](#) -damn what's this?
- [Risk of parotid malignant tumors in Israel \(1970-2006\) - PubMed](#) eh some weird increase in salivary gland tumors in israel? Delete?
- [Risk of breast cancer in female flight attendants: a population-based study \(Iceland\) - PubMed](#) - more cancer in flight attendants? Both of these are from ch 1-3, not sure why they're here (from overpowered)
- [Government must inform us of cell phone risk](#) (put in the not papers?)
- [Public health implications of wireless technologies - PubMed](#)
- [A reduced repair efficiency can explain increasing melanoma rates](#) - does this talk about emfs?
- [Low cancer incidence rates in Ohio Amish - PMC](#)
- [Chronic electromagnetic field exposure decreases HSP70 levels and lowers cytoprotection - PubMed](#)
- [DNA-Mediated Electron Transfer in Naphthalene-Modified Oligonucleotides | The Journal of Organic Chemistry](#) - what is this?
- [Electromagnetic field stimulation of biosynthesis: changes in c-myc transcript levels during continuous and intermittent exposures - ScienceDirect](#) - kinda like dna breaks?
- [A simple experiment to study electromagnetic field effects: protection induced by short-term exposures to 60 Hz magnetic fields - PubMed](#) - eh?
- <https://pubmed.ncbi.nlm.nih.gov/2627835/> eh?
- <https://articles.mercola.com/sites/articles/archive/2010/08/31/how-dirty-electricity-causes-diseases.aspx> eh is there something here?
- [Full article: Letter to the Editor: Will We All Become Electrosensitive?](#) - one other random paper from them, haven't read.
- [Report for the United Nations Educational Scientific and Cultural Organization](#)
 - **"In 2017, Mark Broomhall presented his report to the United Nations Educational, Scientific and Cultural Organization (UNESCO) on the exodus of so many species of wildlife from the Nightcap National Park World Heritage area surrounding Mount Nardi in Australia. Broomhall has lived on Mount Nardi for more than forty years. After antennas for 3G cell phones were installed on the Mount Nardi communications tower in 2002, he saw an immediate decline in insect populations. In 2009, when "enhanced 3G" was added to the tower, along with channels for 150 television stations, 27 bird species left the mountain. In early 2013, when 4G was installed on Mount Nardi, a further 49 bird species left, all bat species became scarce, four common species of cicada almost disappeared, frog populations were**

drastically reduced, and the massive and diverse populations of moths, butterflies, and ants became uncommon to rare.”- firstenberg ** need to read !!**

- “I estimate, in both volume and species that from 70 to 90% of the wildlife has become rare or has disappeared from the Nightcap National Park within a 2-3 km radius of the Mt. Nardi tower complex.” -report author
- Some birds came back after a frequency adjustment or some shit?
- **Put in an “ecological” section?**
- Book “mobile communication and children’s health” by yury grigorievich?
 - Compares this to chernobyl?
 - [Frequencies used in Telecommunications An Integrated Radiobiological Assessment](#) page 54 (book pages not pdf pages) has something interesting?
 - And page 84?
 - Immune system page 92?
 - Some setup page 95?
 - Some thyroid effects near here?
 - Fertility page 102? Do I have that?
- [What if we've been measuring EMF wrong?](#) eh? Random
- [Biological effects of electromagnetic fields - PubMed](#) low quality but maybe? (random)
- Olle johansson stuff (random, probably delete the podcasts)
 - [Research Radiation](#)
 - [The Global Vulnerability Intelligence Platform with Olle E. Johansson | Open Source Security](#)
 - [Olle JOHANSSON | Professor \(Associate\) | PhD | Karolinska Institutet, Stockholm | KI | Department of Neuroscience | Research profile](#)
- [Electrohypersensitivity: state-of-the-art of a functional impairment - PubMed](#)
- [Most Dangerous Technology Ever Invented - Part One | Low-Toxin Living](#)
 - [THE MOST DANGEROUS TECHNOLOGY EVER INVENTED Part One](#)

Unsorted

Liver

●

Ears

Eyes

●

●

Blood brain barrier

Brain

●

Oxidative damage

Reproductive

-

Challenging

-

Unsorted

- [MEASUREMENT OF IMPOSED VOLTAGE GRADIENT ADEQUATE TO MODULATE NEURONAL FIRING* | PNAS](#) (eh?)
 - Theodore bullock?
 - Showed that only 36 billionth of an amp could increase/decrease a nerve firing rate by 5-10%, and that 150 billionths of an amp double the rate of firing or silence a nerve altogether? (how much say 1 milliamp of current would go to a specific nerve though).
 - Increase or decrease depends on direction?
- [The urban decline of the house sparrow \(Passer domesticus\): a possible link with electromagnetic radiation - PubMed](#) - some more hallberg/johannson papers
 - [Ants can be used as bio-indicators to reveal biological effects of electromagnetic waves from some wireless apparatus - PubMed](#)
- [Unveiling the biological effects of radio-frequency and extremely-low frequency electromagnetic fields on the central nervous system performance - PMC](#)
- <https://d-nb.info/1382407998/34>
- [How baseless fears over 5G rollout created a health scare | 5G | The Guardian](#) lies
- [Evidence for a connection between coronavirus disease-19 and exposure to radiofrequency radiation from wireless communications including 5G - PMC](#)
- [Low Intensity Electromagnetic Fields Act via Voltage-Gated Calcium Channel \(VGCC\) Activation to Cause Very Early Onset Alzheimer's Disease: 18 Distinct Types of Evidence - PMC](#)
- [Dr. Martin Pall | 5g Free Oregon](#) delete?
- [Unexplained heart failure? : r/cfs](#)
- [Effects of radiofrequency electromagnetic fields \(RF EMF\) on cancer in laboratory animal studies: A protocol for a systematic review - ScienceDirect](#) can I verify whether this study included all the relevant studies, or does it ignore the 6000+ studies havdas found?
- [RF Animal Cancer Review Is #1](#) could be really good? A lot more like these on the website?
- [Natural background Electromagnetic Field \(EMF\) Levels on Earth](#) page 4 shows how much emfs have increased *****
- [A comprehensive mechanism of biological and health effects of anthropogenic extremely low frequency and wireless communication electromagnetic fields - PMC](#)
- [Human-made electromagnetic fields: Ion forced-oscillation and voltage-gated ion channel dysfunction, oxidative stress and DNA damage \(Review\) - PMC](#)
- [https://onlinelibrary.wiley.com/doi/abs/10.1002/\(SICI\)1521-186X\(1997\)18%253A6%3C455%253A%253AAID-BEM8%3E3.0.CO%253B2-1](https://onlinelibrary.wiley.com/doi/abs/10.1002/(SICI)1521-186X(1997)18%253A6%3C455%253A%253AAID-BEM8%3E3.0.CO%253B2-1) emfs -does this show complete sterility in generation 2?
- [Effect of extremely low frequency electromagnetic field on the pathogenicity of Magnaporthe oryzae - ScienceDirect](#) emfs show increased pathogenicity?

- [Radiofrequency electromagnetic fields: male infertility and sex ratio of offspring - PubMed](#)
- [Peer Reviewed Science on Wireless, EMFs and Health](#) ***
- [Source of Funding and Results of Studies of Health Effects of Mobile Phone Use: Systematic Review of Experimental Studies - PMC](#) *** is this the one that verifies Lai's claims that funding source completely changes outcome of emf paper?

blushield/hope

- Tom Cowan story about IT surfer guy too? (maybe in his podcast)
- <https://imjournal.com/oa/index.html?fid=23-1411> white paper on blue shield
 - https://blushield.com/blogs/education/clinical-pilot-study-on-blushield-efficacy-results-are-in?_pos=1&_sid=09d01b202&_ss=r

unsorted/other

- Can I find that "4 hours kills a quarter of your sperm" paper?

books/references

- [Powerwatch](#)
- https://www.google.com/books/edition/Going_Somewhere/APFMYgEACAAJ?hl=en (eh seems a bit general) (already read)
- [ElectricSense](#)
- [Martin Blank, Ph.D.](#) -decent professor
- [Dr. Magda Havas, PhD.](#)
- [EMF-Portal](#) eh
- [Electromagnetic Fields and Life: Presman, A.: 9781475706376: Amazon.com: Books](#) could be crazy key for understanding how emfs hurt us in real life. Could be everything
- [The 49ers power problem](#)  [#shorts - YouTube](#) is this showing that emfs correlate to nfl injuries at levi stadium? Put in emf chapter?*
- <https://www.sciencedirect.com/science/chapter/edited-volume/pii/B9780721602615500284> intro on voltage gated calcium channels?
 - Put in emf chapter?
- Something from martin pall?

Not papers

- From filterworld
 - Only a few computers connected to darpa in 1969.
 - Usenet in 1980 was bigger
 - Aol turned on in 1993, and had 23 million users by 2000

- Cell phones? Wifi? Bluetooth?
- EMF rocks, holograms, spurling coils etc
- 4 types of emfs (radio, millimeter, magnetic, dirty)
- The above is only a beginning, but they are things that individuals can easily do in large numbers. I have not ridden in an airplane since 1987. I have not watched television since 1967. I have no Internet at home. I bicycle most places, and rarely travel long distances. I have never used a cell phone or a pesticide. Saving the earth requires (a) not poisoning it, (b) slowing down, and (c) navigating the world under one's own power. - Firstenberg, the earth and I (for emf chapter)
- **make the reader feel for Arthur Firstenberg. His tragedy drives readers, but it also makes the case that we are oppressed. ****I have to make the case that his story is no different than a refugee in gaza,.*******

Stories/Quotes

- Samuel milham's friend is so electrosensitive that he gets a rash and even oozes just for being in a school's WiFi for 30 minutes
 -  A Brief Introduction to 'Dirty Electricity' - Dr. Sam Milham
- **Plourde got sick from fluorescent lights right?**
- Olle Johansson, one of the foremost emf researchers, wrote a report "Say To Countryside Goodbye, When Even Healthy People Die" in 2004 about emfs.
- **"The old wisdom, that if you wish to escape civilization you can do so if you go far enough away, is no longer true, because secondhand radiation no longer comes only from cell phones, WiFi, and other personal devices. The invisible tentacles of civilization, in the form of cell towers, radar installations, and two-way satellite dishes, have made radiation ubiqui-tous, impossible to escape no matter how far away you go and how much land you buy. And even if you find one of the last hidden sanctuaries, it can be destroyed in an instant, invisibly and without warning. There is no protection. Quite the opposite-laws have been passed preventing citizens from protecting themselves... but no one is immune."**
-firstenberg
- **"How many [deaths] will it take before people no longer feel too alone to say, 'Your cell phone is killing me,' instead of 'I'm electrically sensitive'?"** - firstenberg
- Dafma and WHO director stories,. Ch 17 Firstenberg (who seems a little sketch)
- **"The lives of EHS persons most often are a living hell"** - johansson (all from firstenberg)
 - **"The EHS had become a model ...of how democracies fail to protect their citizens."** -johansson (eh)
 - **"The EHS became a kind of medical outcast, facing difficulties not shared by the rest of society. A very scary panorama. Anyone, as a fellow human being, would have been equally affected by what I witnessed over and over again."** -johansson
 - **How is this different than, say, a refugee in sunday??? When we look at the full scope of this, I maintain it isn't.**

- MECS people “have to endure harassments of various sorts from the society, from physicians, scientists, experts, politicians, civil servants, their kin...I know I never would be able to constantly take such immense beatings.” -Johansson.
 - **““What keeps me going? To give in and move to another field would leave these persons very much without hope.”** -again, you could think he’s talking about palestine (a few words removed from the quote)
- One medical doctor with MECSS, Dr. Erica Mallery-blythe, describes her symptoms as "It felt like my legs were cooking from the inside" whenever a laptop touched her lap. -firstenberg
 - She couldn’t sleep, had to give up all cell phones and laptops (or all wireless technology), has dizziness headache, heart arrhythmia and tremors.
 - **“She could not put her experience into any medical context that she had ever been taught.”** - firstenberg
 - **"How could there be a condition that was so profound that I'd never heard of it?"** - mallery-blythe ***
 - She realized when she had an MRI that she was now a second class citizen, an enemy of our society. When the high frequency pulse of the MRI was turned on **she saw "a million grains of golden sand exploding outwards," and had**
 - **"a feeling of impending doom."**
 - When she visited a campground in death valley, away from all cell signal, "The relief was unbelievable," she says. For the first time in a long time, she felt completely well and completely normal.
- Mallery blythe (in firstenberg ch 17)
- **“In a contagious fit of insanity, countries are falling like dominoes for the myth that fluorescent lighting is good for the environment.”** - firstenberg
- **“Like the proverbial boiled frog, we are all immersed in a giant pot of radiation, whose intensity is increasing, and whose effect, though unperceived, is nevertheless certain.”** - firstenberg
- **“The symbol transmission frequency of 50 kHz for many of these systems, and the sheer power of the signal, outclassing other sources of radiation in the modern home, are likely responsible—that, and the pulsatile nature of the signal, like a woodpecker beating incessantly at all hours of the day and night.”** - firstenberg
- **“Tinnitus rates have been rising for at least the last thirty years, and dramatically so for the last twenty.”** - firstenberg (eh delete?)
 - Hearing loss declined from 1982-1996, but tinnitus up 30% (like my situation.)
- **“If what is occurring in Wisconsin and Sweden is also occurring in the rest of the world-and there is no reason to think otherwise—then in less than two decades, as computers, cell phones, fluorescent lights, and a crescendo of digital and wireless communication signals have penetrated every recess of our environment, at least a quarter of all adults and half of all children have entered a new world in which they must live, learn, and function while attempting to ignore an inescapable presence of intrusive electronic noise.” ****** -firstenberg
- Firstenberg describes how he could hear his electronic television even as a kid. This wasn’t a widespread problem as first. But, ***

- **“But at some point in the 1990s—the change was so gradual that I can't pinpoint when—I realized that I could not find silence any more. It happened after 1992, when I rented a cabin in northern Ontario—which was still silent—and before 1996, when I fled the new crop of digital cell towers in my native New York to save my life. Since at least 1996, I have found no escape, anywhere in North America, from the awful high-pitched sound that I first heard when I was about fifteen. In 1997, I sought silence in an underground cave in Clarksville, New York—and did not find it. The sound was greatly diminished underground but did not vanish. In 1998, I sought silence in Green Bank, West Virginia, the only place on earth that is legally protected from radio waves—and did not find it. The sound did not even diminish. I can make it louder by plugging in electronic devices, and softer again by unplugging them, but I cannot make it go away, not even by turning the power off in my house. I can hear appliances being turned on in a neighbor's house. Without warning or explanation the sound sometimes becomes suddenly much louder all over my neighborhood. It becomes quieter when there is a power outage. But it never disappears. It matches 17,000 Hz, which is the highest pitch that I can” -firstenberg**
- Really good quote, just cut down?
- Between 2-12% of the population can hear a low frequency hum, from ultrasonic radio broadcasts (modulated at very low frequency) and submarine communication. (cite this book for the 2-12% number) - firstenberg (here or with papers/symptoms?)
 - He says the number is higher for high frequency hearing? Does he give the number earlier?
- **“They concluded that radiation always produces two opposite kinds of effects: injurious effects that shorten the lifespan, and a reduction in basal metabolic rate that lengthens the lifespan. If the dose of radiation is low enough, the net effect is a lengthening of lifespan despite obvious injuries.” (doesn't matter which study this is talking about) -firstenberg**
- **“Modern medicine can take some but not all of the credit for the modern increase in the average human lifespan... But medicine can take none of the credit for the modern extension of the maximum human life span. For medicine still does not pretend to understand the aging process, and only a tiny minority of doctors are even beginning to try to do anything to reverse aging. Yet the maximum age at death, worldwide, has been steadily rising.” - firstenberg**
- **“In the late 1940s, medical practitioners were staring at an impossible contradiction. Most synthetic chemicals were known poisons. But one of the legacies of the war was the ability to manufacture products from petroleum, easily and cheaply, to substitute for almost every consumer product imaginable. Now, thanks to the fledgling petrochemical industry, bringing us “Better Living Through Chemistry,” synthetic chemicals were going to be literally everywhere. We were going to be wearing them, sleeping on them, washing our clothes, our hair, our dishes, and our homes with them, bathing in them, insulating our houses with them, carpeting our floors with them, spraying our crops, our lawns, and our pets**

with them, preserving our food with them, coating our cookware with them, packing our groceries in them, moisturizing our skin with them, and perfuming our bodies with them.” -firstenberg**

- “The medical profession had two choices. It could have attempted to study the health effects, singly and in combination, of the hundreds of thousands of new chemicals that were kaleidoscoping over our world, a virtually impossible task. The attempt itself would have put the profession on a collision course with the mushrooming petrochemical industry, threatening the banning of most new chemicals and the strangling of the economic boom of the next two decades”
- “The other alternative was for the profession to bury its collective head in the sand and pretend that the world's population was not actually going to become poisoned.”
- Cut down and make one quote? (these are sequential)
- **“In an unpolluted world this was a survival advantage, allowing the possessors of this trait to easily avoid places and things that might do them harm. But in a world in which toxic chemicals are inescapable, the porphyrin pathway is to some degree always stressed, and only those with high enough enzyme levels tolerate the pollution well. Sensitivity has become a curse.” ****** - even if I don't agree with the porphyrin stuff, this is *certainly* true more generally. **Really** good quote - firstenberg
- “Porphyrins are light-sensitive pigments that play pivotal roles in the economy of both plants and animals, and in the ecology of planet Earth. In plants a porphyrin bound to magnesium is the pigment called chlorophyll, that makes plants green and is responsible for photosynthesis. In animals an almost identical molecule bound to iron is the pigment called heme, the essential part of hemoglobin that makes blood red and enables it to carry oxygen. It is also the essential part of myoglobin, the protein that makes muscles red and delivers oxygen from our blood to our muscle cells. Heme is also the central component of cytochrome c and cytochrome oxidase, enzymes that are contained in every cell of every plant, animal and bacterium, that transport electrons from nutrients to oxygen so that our cells can extract energy. And heme is the main component of the cytochrome P-450 enzymes in our liver that detoxify environmental chemicals for us by oxidizing them.” -firstenberg
 - Explains porphyrins **CONNECTED TO CYP450???**
 - He's really close to something.
 - **Damn have to actually understand how this works.**
 - **So we can't detoxify without cyp450, and we can't function without the ETC? Is this part of the reason they effect structured water? Can I show that they effect structured water?**
 - **“In other words, porphyrins are the very special molecules that interface between oxygen and life. They are responsible responsible for the creation, maintenance, and recycling of all of the oxygen in our atmosphere: they make possible the release of oxygen from carbon dioxide by plants, the extraction of oxygen back out of the air by both plants and animals, and the use of that oxygen by living things to burn carbohydrates, fats, and**

proteins for energy. The high reactivity of these molecules, which makes them transformers of energy, and their affinity for heavy metals, also makes them toxic when they accumulate in excess in the body, as happens in the disease called porphyria—a disease that is not really a disease at all, but a genetic trait, an inborn sensitivity to environmental pollution.”

- 8 step process to make heme from porphyrins?
- Can we find evidence of cyp and heme disruption?
- **“Like workers on an assembly line, each enzyme has to work at the same rate as all the others in order to keep up with the demand for the final product, heme. A slowdown by any one enzyme creates a bottleneck, and the porphyrins and precursors that accumulate behind the bottleneck get deposited all over the body, causing disease. Or if the first enzyme is working harder than the rest, it produces precursors faster than the enzymes down the line can handle, with the same result. Their accumulation in the skin can cause mild to disfiguring skin lesions, and mild to severe light sensitivity. Their accumulation in the nervous system causes neurological illness, and their accumulation in other organs causes corresponding illness.” - any step in a chain causes disaster!**
- **“Morton has brought us back to the original view of porphyria: it is not only a fairly common disease but exists most often in a chronic form with comparatively mild symptoms. And its principal cause is the synthetic chemicals and electromagnetic fields that pollute our modern environment.” -firstenberg**
 - **“Porphyrins are central to our story not only because of a disease named porphyria, which affects a few percent of the population, but because of the part porphyrins play in the modern epidemics of heart disease, cancer, and diabetes, which affect half the world, and because their very existence is a reminder of the role of electricity in life itself, a role which a few courageous scientists have slowly elucidated.”**
- **“The five to ten percent of the population who have lower porphyrin enzyme levels are the so-called canaries in the coal mine, whose songs of warning, however, have been tragically ignored. They are the people who came down with neurasthenia in the last half of the nineteenth century when telegraph wires swept the world; the victims of sleeping pills in the late 1880s, of barbiturates in the 1920s, and of sulfa drugs in the 1930s; the men, women, and children with multiple chemical sensitivity, poisoned by the soup of chemicals that have rained on us since World War II; the abandoned souls with electrical sensitivity left behind by the computer age, forced into lonely exile by the inescapable radiation of the wireless revolution.” (eh?) - firstenberg**
- **“To begin to get a sense of just how rare diabetes once was, I searched the antique books in my medical library. I first looked in the Works of Robert Whytt, a Scottish physician of the early and mid-eighteenth century. I did not find diabetes mentioned in the 750-page volume.” - firstenberg**
 - **“American physician John Brown, at the end of the eighteenth century, devoted two paragraphs to the disorder in his Elements of Medicine. In the Works of**

Thomas Sydenham, who practiced in the seventeenth century and is known as the Father of English Medicine, I found a single page on diabetes. It set forth a sparse description of the disease, recommended an all-meat diet, and prescribed an herbal remedy.”- the recipes thing is kind of fascinating too

- **“Occasional cases were reported in Turkey, Egypt, Morocco, Mexico, Ceylon, and certain parts of India. But an informant in St. Petersburg had not seen a case in six years. Practitioners in Senegambia and the Guinea Coast had never seen a case, nor was there any record of it occurring in China, Japan, Australia, the islands of the Pacific, Central America, the West Indies, Guiana, or Peru. One informant had never seen a case of diabetes during a practice of many years in Rio de Janeiro.”** - so we could effectively regard the back ground rate as 0?; firstenberg
- **“In today’s world, as we will see, limiting one’s intake of sugar plays an important role in the prevention and control of this disease. But, as we will also see, blaming the rise of diabetes on dietary sugars is as unsatisfactory as blaming the rise of heart disease on dietary fats.”**- firstenberg
- **“But one environmental factor could account for the disparities. Electrification came to most Indian reservations later than it came to most American farms. Even in the late twentieth century some reservations were still not electrified. This included most Indian reserves in the Canadian Territories and most native villages in Alaska. When the first electric service came to the Standing Rock Reservation in the Dakotas in the 1950s, diabetes came to that reservation at the same time. The Gila River Reservation is located on the outskirts of Phoenix. Not only is it traversed by high voltage power lines serving a metropolis of four million, but the Gila River Indian Community operates its own electric utility and its own telecommunications company. The Pima and Maricopa on this small reservation are exposed to a greater concentration of electromagnetic fields than any other Indian tribes in North America.”** (gila river had 380/100K) - firstenberg
- **“Brazil, which has grown sugar cane since 1516, has been the largest producer and consumer of that commodity since the seventeenth century. Yet in the 1870s, when diabetes was beginning to be noticed as a disease of civilization in the United States, that disease was completely unknown in the sugar capital of the world, Rio de Janeiro. Brazil today produces over 30 million metric tons of sugar per year and consumes over 130 pounds of white sugar per person, more than the United States. Analyses of the diets of the two countries—Brazil in 2002-2003, and the United States from 1996-2006—revealed that the average Brazilian obtained 16.7 percent of his or her calories from table sugar or sugar added to processed foods, while Americans consumed only 15.7 percent of their calories from refined sugars. Yet the United States had more than two and a half times the rate of diabetes as Brazil.”** - firstenberg
 - It’s switching now, but only as they move towards ultraprocessed foods etc.
- **“Insulin resistance which accounts for the vast majority of diabetes in the world today—did not exist before the late nineteenth century. Neither did obese diabetic patients. Almost all people with diabetes were insulin-deficient, and they were universally thin: since insulin is needed in order for muscle and fat cells to absorb**

glucose, people with little or no insulin will waste away. They pee away their glucose instead of using it for energy, and survive by burning their stores of body fat.” - firstenberg

- “In fact, overweight diabetics were at first so unusual that late-nineteenth-century doctors couldn’t quite believe the change in the disease —and some of them didn’t. One of these, John Milner Fothergill, a prominent London physician, wrote a letter to the Philadelphia Medical Times in 1884, in which he stated: “When a corpulent, florid- complexioned man, well-fed and vigorous, passes sugar in his urine, only a tyro would conjecture that he was the victim of classical diabetes, a formidable wasting disease.” Dr. Fothergill, as it turned out, was in denial. A corpulent, florid-complexioned man himself, Fothergill died of diabetes five years later.”
- “The linked failure of both carbohydrate and fat metabolism is a sign of disordered respiration in the mitochondria, and the mitochondria, we have seen, are disturbed by electromagnetic fields. Under the influence of such fields, respiratory enzyme activity is slower. After a meal, the cells cannot oxidize the breakdown products of the proteins, fats, and sugars that we eat as quickly as they are being supplied by the blood. Supply outstrips demand. Recent research has shown exactly how this happens.” - tied to theories about mitochondria! - firstenberg
- “Randle had not been thinking in terms of mitochondria, much less what could happen if an environmental factor restricted the ability of the respiratory enzymes to work at all. But during the last decade and a half, finally some diabetes researchers have begun focusing specifically on mitochondrial function. Remember that our food contains three main types of nutrients-proteins, fats, and carbohydrates-that are broken down into simpler substances before being absorbed into our blood. Proteins become amino acids. Fats become triglycerides and free fatty acids. Carbohydrates become glucose. Some portion of these is used for growth and repair and becomes part of the structure of our body. The rest is burned by our cells for energy.” - here’s where he starts to cook (for better or worse) -firstnberg
 - “Within our cells, inside tiny bodies called mitochondria, amino acids, fatty acids, and glucose are all further transformed into even simpler chemicals that feed into a common cellular laboratory called the Krebs cycle, which breaks them down the rest of the way so that they can combine with the oxygen we breathe to produce carbon dioxide, water, and energy. The last component in this process of combustion, the electron transport chain, receives electrons from the Krebs cycle and delivers them, one at a time, to molecules of oxygen. If the speed of those electrons is modified by external electromagnetic fields, as suggested by Blank and Goodman, or if the functioning of any of the elements of the electron transport chain is otherwise altered, the final combustion of our food is impaired. Proteins, fats, and carbohydrates begin to compete with each other and back up into the bloodstream. Fats are deposited in arteries. Glucose is excreted in

urine. The brain, heart, muscles, and organs become oxygen-deprived. Life slows down and breaks down.” - this one seems universal? Ties into mitochondria stuff, but how does it compare to seneff? I’m so excited to synthesize these!

- “Only recently was it proven that this actually happens in diabetes. For a century, scientists had assumed that because most diabetics were fat, obesity causes diabetes. But in 1994, David E. Kelley at the University of Pittsburgh School of Medicine, in collaboration with Jean-Aimé Simoneau at Laval University in Quebec, decided to find out exactly why diabetics have such high fatty acid levels in their blood. Seventy-two years after insulin was discovered, Kelley and Simoneau were among the first to measure cellular respiration in detail in this disease. To their surprise, the defect turned out not to be in the cells' ability to absorb lipids but in their ability to burn them for energy. Large amounts of fatty acids were being absorbed by the muscles and not metabolized. This led to intensive research into all aspects of respiration at the cellular level in diabetes mellitus. Important work continues to be done at the University of Pittsburgh, as well as at the Joslin Diabetes Center, RMIT University in Victoria, Australia, and other research centers.”
- papers to play this out - I’m including papers... getting a little messy
 - [Skeletal muscle glycolytic and oxidative enzyme capacities are determinants of insulin sensitivity and muscle composition in obese women - PubMed](#)
 - [Skeletal muscle fatty acid metabolism in association with insulin resistance, obesity, and weight loss - PubMed](#)
 - [Fuel selection in human skeletal muscle in insulin resistance: a reexamination - PubMed](#)
 - [Impaired mitochondrial oxidative phosphorylation and supercomplex assembly in rectus abdominis muscle of diabetic obese individuals - PubMed](#)
 - [The role of mitochondria in the pathogenesis of type 2 diabetes - PubMed](#)
- [The glucose fatty-acid cycle. Its role in insulin sensitivity and the metabolic disturbances of diabetes mellitus - PubMed](#) -part of firstenberg’s theory
 - “Glucose and fatty acids, proposed University of Cambridge biochemist Philip J. Randle in 1963, compete with each other for energy production. This mutual competition, he said, operates independently of insulin to regulate glucose levels in the blood. In other words, high fatty acid levels in the blood inhibit glucose metabolism, and vice versa. Evidence in support appeared almost immediately.”
 - [Regulatory Interactions Between Lipids and Carbohydrates: The Glucose Fatty Acid Cycle After 35 Years](#) - follow up here
 - <https://karger.com/mex/article-abstract/10/3/153/376517/Effects-of-Fat-Infusion-on-Glucose-Tolerance-and?redirectedFrom=PDF>
 - “Jean-Pierre Felber and Alfredo Vannotti at the University of Lausanne gave a glucose tolerance test to five healthy volunteers, and then another

one a few days later to the same individuals while they were receiving an intravenous infusion of lipids. Every person responded to the second test as though they were insulin resistant. Although their insulin levels remained the same, they were unable to metabolize the glucose as quickly in the presence of high levels of fatty acids in their blood, competing for the same respiratory enzymes. These experiments were easy to repeat, and overwhelming evidence confirmed the concept of the "glucose-fatty acid cycle." Some evidence also supported the idea that not only fats, but amino acids as well, competed with glucose for respiration." - eh? **Why don't I believe firstenberg in some of this?**

- **"But the widespread use of PET scanning for diagnosing and staging human cancers has catapulted the Warburg effect back onto the main stage of cancer research. No one can now deny that cancers live in anaerobic environments, and that they rely on anaerobic metabolism in order to grow. Even molecular biologists, who once focused exclusively on the oncogene theory, are discovering, after all, that there is a connection between lack of oxygen and cancer. A protein has been discovered that exists in all cells— hypoxia-inducible factor (HIF)—that is activated under conditions of low oxygen, and that in turn activates many of the genes necessary for cancer growth. HIF activity has been found to be elevated in colon, breast, gastric, lung, skin, esophageal, uterine, ovarian, pancreatic, prostate, renal, stomach, and brain cancers."** -firstenberg, couldn't really find the papers he was referencing here (am I a failure for that?)
 - **"Cellular Changes that indicate damaged respiration-including reductions in the number and size of mitochondria, abnormal structure of mitochondria, lessened activity of Krebs cycle enzymes, lessened activity of the electron transport chain, and mutations of mitochondrial genes-are being routinely found in most types of cancer. Even in tumors caused by viruses, one of the first signs of malignancy is an increase in the rate of anaerobic metabolism."** - huh, so maybe carcinogenicity is just a normal part of the cycle of life? Maybe the problem isn't genes or (natural) stressors but it's *epigenetics* and methylation and radiation preventing us from fixing the problem/apoptosing?
- **"Every historical source shows that cancer always accompanied electricity. In 1914, among about 63,000 American Indians living on reservations, none of which had electricity, there were only two deaths from cancer. The cancer mortality in the United States as a whole was 25 times as high."**
 - In 1914, incidences of cancer in indigenous on reservations was 3/100K. The us as a whole was allegedly 25x as high?
 - Only 2 people out of 63,000 american indians died.
 - Mortality
- **"An unusual one-year rise in cancer mortality of from 3 to 10 percent occurred in every modernizing country in 1920 or 1921. This corresponded to the beginning of commercial AM radio broadcasting. In 1920, cancer deaths rose 8 percent in Norway, 7 percent in South Africa and France, 5 percent in Sweden, 4 percent in**

the Netherlands, and 3 percent in the United States. In 1921, cancer deaths rose 10 percent in Portugal, 5 percent in England, Germany, Belgium, and Uruguay, and 4 percent in Australia.”

- “Lung cancer, breast cancer, and prostate cancer rates rose spectacularly throughout the first half of the twentieth century in every country for which we have good data. The number of deaths from breast cancer quintupled in Norway, sextupled in the Netherlands, and increased sixteen-fold in the United States. Lung cancer deaths increase twenty-fold in England. Prostate cancer deaths increased eleven-fold in Switzerland, twelve-fold in Australia, and thirteen-fold in England.”
- <https://archive.org/details/diseasesofmodern00richuoft/page/n11/mode/2up>
 - “Lung cancer was once so uncommon that it was not even listed separately in most countries until 1929. In the few countries that tracked it, it did not start its dramatic rise until about 1920. Benjamin Ward Richardson, in his 1876 book, *Diseases of Modern Life*, is surprising to a modern reader in this respect. His chapter on "Cancer from Smoking" discusses the controversy over whether tobacco smoking caused cancer of the lip, tongue, or throat, but cancer of the lung is not even mentioned. Lung cancer was still rare in 1913, the year when the American Society for the Control of Cancer was founded. Out of 2,641 cases of cancer reported to the New York State Institute for the Study of Malignant Disease that year, there was only a single case of primary lung cancer. Frederick Hoffman, in his exhaustive 1915 book, *The Mortality From Cancer Throughout the World*, asserted as a proven fact that smoking caused cancer of the lips, mouth, and throat, but like Richardson four decades previously made no mention of lung cancer in connection with smoking." - firstenberg
 - Wow, one case of lung cancer in all of new york state. That's 0.04% of all cancer cases. There were 9.5 million people in ny in 1913 ([source](#)), so that's 0.01/100K.
 - Need to find the stuff in the book above about smoking (and in this book), and verify that neither of them mention lung cancer?
 - Now we're at 49.4/100K incidences ([source](#)). Lung cancer is the second (or third) most common cancer depending on how you count. ([source](#))- were prostate and breast cancers a thing back then? Skin cancers?
 - Lung cancer is up **5000 fold**.
- In 2002, Gro Harlem Brundtland, physician, director general of WHO, and 3x prime minister of Norway has MECS, and said that no one was to enter her office with a cell phone. The next year, she was removed from office. (firstenberg)
 - **“The following year she was no longer Director-General of the World Health Organization. No other public officials have repeated her mistake.”**
(firstenberg; [source](#) for her symptoms)
 - Damn even in the interview she can tell the interviewer's cell phone is on.
- Some like peet seeger might be losing memory because of emfs, but it's in the range that feels “normal” for his age. However (firstenberg)

- **“Those of us whose injuries are so severe, so devastating that we can no longer ignore them, and who are lucky enough to figure out what has happened to us and why, have here and there formed tiny, isolated groups, and for lack of a more acceptable term we call our injury "electrical sensitivity," or worse, "electromagnetic hypersensitivity" (EHS), a travesty of a name for a disease that affects the whole world and everyone in it, a name as absurd as "cyanide sensitivity" would be if anyone were foolish enough to apply such a name to those poisoned. The problem is that we are all being electrocuted to a greater or lesser extent, and because society has been in denial about that for more than two hundred years, we invent terms that hide the truth instead of speaking in plain language and admitting what is happening.”*** -firstenberg**
- **“After pulsed microwave radiation came to my hometown for the first time, all over the city at once, on November 14, 1996, I was so sure it had killed masses of people that I telephoned epidemiologist John Goldsmith to ask for advice on how to prove it.... I had been sure, because the sudden irradiation of my city had almost killed me, and because I knew people who had died from it.”**
- **Dafna Tachover, an attorney-mba licensed in 2 counties, had ben working for an investment company in manhattan, married to a prestigious doctor, opening a private law practice, and was planning on having a baby, life was going well. Jut a few years later, ‘she was divorced, unemployed, still childless, and struggling just to survive in a remote farmhouse in upstate New York.’ (firstenberg) "My life is pretty much impossible," she said, "as I am a prisoner in my own house. I can - & anywhere, I cannot even walk on the street and drive into town. I cannot work and be in the presence of other people. I cannot fly, travel, go to a restaurant, or sleep in a hotel. I cannot access a doctor, a hospital, or even go to court to enforce my rights which are being crushed. When I needed to move, I could not look for a house by myself, as driving on roads saturated with antennas and cars with wireless systems has become impossible. My father had to come from Israel to help me and after two months of searching, and five hundred houses, I found just one house which I could tolerate. The closest neighbor is 300 yards away (such distance is required in order to not be affected by a neighbor's WiFi, cordless phones, and other gadgets), there is only spotty cell phone reception, and radiation from only one radio station. I live in an isolated cabin in the woods and my only 'outing' to civilization is a once-a-month trip to buy groceries. Many times I am not well enough to even do that and I depend on friends to buy me food. As I cannot work and my money is almost exhausted, I don't know how I will survive financially, and with the spread of 'smart' meters, soon there will not be even one house I would be able to live in.” -her words (invisible rainbow)**
 - **"Every time I used the computer I felt pressure in my chest, the rapid pounding of my heart, difficulty breathing, dizziness, pressure in my head, my face would become red and hot, and I was nauseous. I had weird cognitive problems—I could not find words and when my husband spoke to**

- me, five minutes later I would not remember that he did. I suddenly was unable to touch my cell phone and if I put it near my head it felt as if someone were drilling into my brain."** (her words, cite invisible rainbow)
- When she went home to israel to recover her health, on the very first day she saw cell phone antennas on the roof of the mall, her body collapses nad she just started crying. There is no escape from the genocide we have created, at least, not unless you personally stop it.
 - What could you do without privilege?
 - "Reading/talking about this makes me want to die." (a note I took earlier)
 - **"From that moment on my condition quickly went downhill and my life became a nightmare. I could not sleep any more and the pain was unbearable."** -same girl after she got to israel
 - **"Back in New York, Tachover spent months living in her car. 'I could not be in my apartment, could not find a house, and I spent my days desperately trying to find a place without radiation in which to park my car. At nights I parked my car in parking lots and would cover the windows with dark cloths and sheets so people would not see me.'"**
 - This is literally homelessness.
 - **"Unfortunately Tachover's experience is very common, and becoming more so. Although she is now focusing her efforts as a lawyer to try to win "basic human and civil rights" for those who are called electrically sensitive, Tachover knows that the real problem is much bigger."** (delete last clause?)
- Cell phones came to new york in november 14, 1996.(from Omnipoint Communications)
"When I returned home on November 16, I became dizzy... within a few days I became nauseated, and I had uncontrollable tremors. I had the first asthma attack of my life. My eyeballs felt like they were bulging out, my throat swelled, my lips felt dry, fat, and puffy, I felt pressure in my chest, and the bottoms of my feet hurt. I became so weak I couldn't lift a book. My skin became so sensitive I couldn't bear to be touched. My head was roaring like a freight train. After November 20 I did not sleep, and could not eat. During the night of November 22, my larynx went into spasm and I couldn't draw a breath in or out. In the morning I grabbed my sleeping bag, got on the Long Island Railroad. and left town." (firstenberg)
 - Symptoms many felt here include "eye pain, insomnia, dry lips, swollen throat, pressure or pain in the chest, headaches, dizziness, nausea, shakiness, other aches and pains, and flu that won't go away."
 - "The very first person to answer the ad [about similar symptoms] was a forty-one-year-old airline employee who lived in the Bronx. Joe Sanchez's head suddenly began to hurt on about November 15, so badly that he was afraid he was having a stroke. Five and a half months later, on May 8, 1997, he died-of a hemorrhagic stroke."
 - **"Like Tachover, and like so many other people throughout the world, life was now impossible. Mallery-Blythe and her husband moved out of their home and began camping in tents or sleeping in the back of their car. She describes it as 'living like**

war refugees.' She could not enter a market or a gas station without becoming crippled. 'You can't do the basic things you need to live. You almost feel like you're going to wake up, like it's some kind of bizarre dream.'" (firstenberg, then blythe in the quote)

- "Almost worse than the physical hardship was the fact that they had to hide the truth of what was happening from everybody they knew and met. They lived like that for more than half a year, until they found a log cabin by a lake in South Carolina, where they were forced to live without electricity so that she could recover her health."
- "As a neuroscientist," says Johansson, "I thought was close enough, and I strongly believed that the issues she wanted to highlight, using the conventional repertoire of scientific 'tools,' ought to be easily investigated. I did not realize at all that there were other forces not wanting to see such studies initiated, but very soon I understood that these very clear-cut and simple and obvious investigations proposed by Kajsa Vedin would be very, very hard to start."
- Olle Johansson is faculty at karolinska institute, arguably the best medical school in europe and the institute that awards the nobel prize every year. He heard about a potential danger from emfs over the radio (from Kajsa Vedin). Interested, Johansson remarked. (firstenberg)
 - "Screen dermatitis"
 - "'For me," Johansson recalls, "it was immediately clear that persons claiming skin reactions after having been exposed to computer screens very well could be reacting in a highly specific way and with a completely correct avoidance reaction, especially if the provocative agent was radiation and/or chemical emissions—just as you would do if you had been exposed to, for example, sun rays, X-rays, radioactivity, or chemical odors. Very soon, however, from different clinical colleagues a large number of other 'explanations' became fashionable—that the persons claiming Screen dermatitis were only imagining this, or they were suffering from post-menopausal psychological aberrations, or they were old, or had a short school education, or were the victims of classical Pavlovian conditioning. Strangely enough, most of the, often self-made, 'experts' who proposed these explanations had themselves never met anyone with screen dermatitis and had never done any investigations of their proposed explanatory models."
 - (eh?)
 - "When he first contacted Vedin, Johansson did not personally know anyone with screen dermatitis either, but he quickly learned that they were hidden all around him in plain view. He learned that skin rashes were only the most visible manifestations of a devastating impairment, and that exposure not only to computer screens but other sources of radiation, and even ordinary electricity, could seriously damage the heart, nervous system, and other systems of the body." - firstenberg, eh)

- **“Nothing protects you from this functional impairment, not political stance, not your income, not sex, skin color, age, where you live or what you do for a living. Anyone can be affected.”** - Johansson***
- **“Johansson has not only seen his research funding disappear, and has lost his position at the Karolinska Institute, but he has had death threats, and on one occasion an attempt on his life.”**- firstenberg (spokes of his motorcycle wheel had been cleanly sawed through in a professional way.

unsure/weird

- Dimmer switches and new fluorescent light bulbs are really bad
- What about smart meters?
- Some smart meters talk to each other down the block, some broadcast, allows for much more surveillance and remote deactivation? Surveillance capitalism can't happen without electrical genocide (data stored locally less dangerous?)
- 10-15% of people have cardiac irregularities when cell phones are turned on?
 -  Samuel Milham Electrification's Tragic Legacy #3.mov indoor workers have higher rates of melanomas than sailors?
 - Dirt electricity website? Has extra papers from book (including als??)
 - Studies on suicide rates in book:
 - /website? Gulf war disease another symptom?
 - He never flies either anymore
 - Broadband internet has huge implications for EMFs too because of phone line?
 - He maybe gets into the real “dirty electricity” of it all?
 - Arcing creates dirty electricity?
 - He estimates half of all deaths come from dirty electricity
 - 70% of electricity returns through dirt because we didn't set up proper return wires in electrical grid
 - [Sam Milham](#) ***** (his website)
- Earthing and blushields? (do I have?)
- [EMF-Portal](#) could actually be great?
- [US6506148B2 - Nervous system manipulation by electromagnetic fields from monitors - Google Patents](#) eh?
- [The 1918 flu pandemic, a cautionary tale - CBS News](#)
 - Most spanish flu deaths happened within a few week period? Can I correlate that to the radio introduction?
 - Jesus you couldn't tell white people from black people. Bleeding from eyes
 - More deaths than the war itself
 - What percent of the world died?
 - Was there radio in india and/or china? ([source](#), biggest deaths there)
 - [13. Radio During World War One \(1914-1919\)](#)
 - This could tell us about the timing with radio?

- [Sunspot activity and influenza pandemics: a statistical assessment of the purported association - PMC](#)
 - Some (skeptical) stuff on the sunspot and influenza correlation
 - Comets and black plague?
 - There was a comet (newton's same comet) at the plague 1130 BC? ([source](#))
 - At least one comet has a strong electromagnetic field? ([Passing Comet Affects Magnetic Field at Mars | NASA Jet Propulsion Laboratory \(JPL\)](#))
 - [Comets Don't Have Magnetic Fields After All, Rosetta Discovers : ScienceAlert](#)
 - At least one comet doesn't have a magnetic field?
 - [Can the Magnetic Field of Rosetta's Comet Tell Us How the Outer Solar System Formed? | News | Astrobiology](#)
 - This one says the comet *does* have a magnetic field? Now IDK.
- [Post Traumatic Stress Disorder](#)
 - Was there no ptsd in revolutionary or 1812 wars????
- Isn't there some stat that our electric currents are a trillion times higher than the background or something like that? Where can I find those numbers?
 - [Quintillion](#) times? Do I believe her?
 - [This](#) gives background levels?
 - [This](#) gives some modern levels?
- EMFs classified as possibly carcinogenic in 2011? What's that classification? Italian Supreme Court ruled that they can cause brain tumors?
- Belgian government banning cell phones from young children? (Is this for emfs?)
- [Published Research by Paul Héroux, PhD on Electromagnetic Radiation - Environmental Health Trust](#)
- [The WHO-commissioned systematic reviews on health effects of radiofrequency radiation provide no assurance of safety - PMC](#) / eh add to papers?
- "Cells in the body react to emfs as potentially harmful, just like to other environmental toxins" - Professor reb goodman (radiation nation)
- "Our safety standards are inadequate, and we must protect ourselves from exposure to EMFs... The science is very strong, and we should sit up and pay attention." ([source](#), REALLY WEAK) (radiation nation)
- [DNA is a fractal antenna in electromagnetic fields - PubMed](#) (from plourde)
 - Sounds kinda like wu wu bullshit?
- [Mast Sanity](#) (from plourde)
 - scary

Unsorted

- radiation is 10 billion times higher than 1960s? - nontinfoils page 51 (ref 30)
 - Natural background levels page 47* (ref 13 too)
 - **What is this at now?**
- As Martin Blank, PhD reports in Overpowered: "Since 1990, Lai has been tracking the studies of the health effects of RF radiation on humans published around the world. He has hundreds of such studies in his database." Approximately 30% of the studies are

funded by the wireless industry and 70% are funded by other sources that are presumably more independent. - nontinfoils, add to emfs ***

- Of the industry-funded studies, 27% demonstrated a biological effect in humans resulting from RF exposure; whereas independently funded studies found such effects in 68% of the studies. As Lai explains, 'a lot of the studies that are done right now are done purely as PR tools for the industry'."
- **Have to go through this book?**
- <https://apps.dtic.mil/sti/pdfs/AD0750271.pdf> is this the 1971 naval research report by glaser with 2300 citations on emfs? Do I have it already?
 - **Yes it is!!!!**
 - *** page 12 whole lot of symptoms
- [How does this field of lights work? | Science | The Guardian](#)
 - https://vimeo.com/7293382?turnstile=1.1da2H7XBC7mqbmoN7Yh-moDuUyEnTcPSEhOPuFzpqNRmMI17W0qxsv8xHyER-xxpfBCLU4LaEyMNI3k-d9NFJeLm3jR8G11J8bSIPZnMPK3cGK0JJSwQB41zqDFASAUkQQ8YyUk0n_xKf1q-KI1-gnTyP17NXWgihyYxv-qCvwWga38PDmgWdLuVY5dZ6pxebHU91KjJyWnwRIF_syl3shGmo_eNekLRstOUDsYI3g9T-SaueB-PEoU799pqqBLS3Q_4q2RDRDRbBd3iB9wuNjpHXBsgjNrN_NdShPdS_sAXBmK-er7LqEhzipzeWbocZSONoX-X_0pl_j0d6RtbYaoeTn6QNbGWiqh8sqaekSqcbPOLW3tYoMTKYdevUvj-eAIOd2b_94PRwOiUHlosEqmOqbbqPkc99VXz-odC9n7T_IJbg0fQomkSlqNQsWrR1v6XbabPPY3SKmERWW0QRTRUHWa8zA3x96BI7h6gDJT2Bedm4UvrXWYAEi3MxUUvffvnV1B2eugm_6PszoTmRJSvHOV5kMwfABMW1tnGCWo-52ZiEZteyeR3ljY93Glqda0mk2tC6V-MMp9f-ud7dsgzw2-11CVvYYa9d9O2IE04.TER7z2C8Sfu60q0KOUev7g.9f331ae2706c48978362ea75114d4e40fdd5c35d9d791db4f9058588d1cd1e1b
- **"It got to the point that when a co-worker would turn on the fluorescent lights, it would drain my energy level," he recalls. "I figured it had to be something at work because I would partially recover on the weekend."** - one person with MECSS named gillian joy (page 149 zapped)
 - He worked on an air force base (I think) and the radar was part of what made him sick
 - **"He requested a transfer based on his medical condition, which was refused because the Canadian health program didn't recognize electrosensitivity as a real illness...He was denied disability"**
- [Electromagnetic fields, polychlorinated biphenyls, and prostate cancer mortality in electric utility workers - PubMed](#) (add these)
 - [Occupational exposure to electromagnetic fields and breast cancer in men - PubMed](#)
 - [Incidence of cancer in Norwegian workers potentially exposed to electromagnetic fields - PubMed](#)
- Also some weird clusters? Eh
 - [Campus Building Blamed for Cancer Cluster - The New York Times](#)
 - [Teachers' Cancers La Quinta Middle School 1988-2005 Sam Milham, MD and Lloyd Morgan](#) ** dirty electricity was so high that couldn't even be measured, and

odds of this cancer cluster were 10K to 1? ($p < 0.0001$) (18 cancers in 16 teachers out of 137 teachers. Presumably more highly correlated to the rooms?)

■ **Ooh this one looks good add**

- Havdas: (one of these is also a cluster?)
 - [\(PDF\) Teacher and student response to the removal of dirty electricity by the Graham/Stetzer filter at Willow Wood School in Toronto, Canada](#) - did 64 % of people improve with graham stetzer filter in place? Still a little mixed (is there no true test case anymore?)
 - https://journals.sagepub.com/doi/abs/10.1177/0270467611417852?__cf_chl_f_tk=_DncSj4XVX.EERQj0w13F2vY2.SssVuhXxwhVBDe5_Y-1783278874-1.0.1.1-Rihqrrr.4kbfECxi6q4CWV5nsftO4qVZAc68RtfKO1Q
 - [Environmental and Health Concerns Associated with Compact Fluorescent Lights](#)
 - [Graham/Stetzer Filters Improve Power Quality in Homes and Schools, Reduce Blood Sugar Levels in Diabetics, Multiple Sclerosis Symptoms, and Headaches](#)
 - [Power quality affects teacher wellbeing and student behavior in three Minnesota Schools | Request PDF](#)
-
- https://electromagnetichealth.org/wp-content/uploads/2010/10/Havas_HRV_Ramazzini1.pdf
- [National Council on Radiation Protection and Measurements Report Shows Substantial Medical Exposure Increase | Radiology](#) - ionizing radiation increased 7fold between 1980 and 2006 in standard medical procedures?
 - More on refs 2-7 of this chapter
 - [Doctors Reap Benefits By Doing Own Tests - The Washington Post](#)
 - All this proves that even a small dose of (ionizing) radiation really does increase cancer risk?
- [Intrauterine effects of ultrasound: animal studies - PubMed](#) this claims there's a risk of prolonged ultrasound because there's low frequency (3.5-5 hz) emfs involved? Says that 1-2 in pregnancy is fine, but you don't want to make a habit out of them? (from zapped)
- <https://pubmed.ncbi.nlm.nih.gov/23675615/> nonthermal emf therapeutics, similar to some suggestions by pall
- <https://www.emf-portal.org/en/article/overview/mobile-communications-med-bio/g-83/t-83004?view=list&pageIndex=11&pageSize=25> one more overview?
-
- <https://pubmed.ncbi.nlm.nih.gov/17178584/>
-
- <https://research.radiation.dk/>
- 3g is still a quintillion times higher than natural background?
- Did world wildlife fund show the number of populations IN each species declining?
- https://www.researchgate.net/publication/391336963_HONEYBEES'_BEHAVIOUR_IN_A_FARADAY-SHIELDED_HIVE_MANDATORY_SCHUMANN_RESONANCE_FOR_COLONY_SURVIVAL **** WITHOUR SCHUMAN RESONANCE HONEYBEES CANT REPRODUCE

- file:///Users/paulmenker/Downloads/NHTSA-2016-0126-0102_attachment_6.pdf (random from me)
- <https://www.eurekaselect.com/article/120618> random new
-
- Vgccc in almost every neuron and glial cell in the brain, for almost every neurotransmitter? so depression, Alzheimer's, autism? Melatonin basically drops to 0 via pathways here? Cataracts? ***are they rising?***
- Tachycardia and arrhythmias specifically caused by EMFs? These are rising while ischemic heart deaths, the stuff we're told to worry about, are going down?
- Pacemaker cells have vgccc?
- Dr magda havas of some of this? Cordless phone study? Can produce instantaneous tachycardia??
-
- MCS involves NMDA receptors. Can I prove this through glyphosate at al? Flitmate, calcium Channels and GABAA all involved?
-
- Nmda and glutamate just like vgccc? But Seneff posits many more mechanisms right?
- Nmda antagonists reduces toxicity, just like l-vgcc blockers?
- Because NMDA receptors and L-type VGCCs very similar? Both let calcium through and can produce iNOS?
- eNOS cycle? Leads to TNF-alpha, and IL-6 and a bunch of other inflammatory signals/cytokines?
- NO/ONOO cycle
- Vgccc in pretty much all multicellular organisms
-
- https://youtu.be/Pjt0iJThPU0?is=GKZW_FbdKWguwtnS 10^10 increase in exposure? This number is probably outdated by a factor of 10 (I have this somewhere right? Or, how do I compute it?)
- "There are so many published studies, each of which falsify the current safety standard and you have these [regulators] ignoring all of them."
- "People know that [emfs are] and issue even though the media have completely ignored it."
- "This is all a house of cards, and it's all going to blow down. The question is how many people have to suffer before this happen."
- Papers at the end!
- New talk, eh
- https://bsem.org.uk/wp-content/uploads/_pda/2025/05/003-Martin-Pall-London-27-Sept-Pall-1.pdf is this the slides for the whole talk. Can I find the reviews he's talking about?
- https://www.researchgate.net/publication/49684762_Ultra-rapid_delayed_rectifier_channels_molecular_basis_and_therapeutic_implications
- Nitric oxide binds cytochromes?
- <https://pubmed.ncbi.nlm.nih.gov/34043892/> modern review * magnetic fields are highly penetrating?
-

- This is the one I think!
- Interesting how it's peak forces here as well
- Coherent emfs are worse, natural are incoherent. Peak forces are what matter the most (actually consistent with firstenberg interestingly)
- Cardiac events. Animals too
-
- Safety guidelines only tell you about averages!!
- Higher frequency= higher pulsation?
- Modulated emfs are much more active than smooth emfs. FM radio is the only smooth emf? Everything else is pulse like and actually much worse? "The 'smarter' the device, the more it pulses (short bursts) and therefore the more dangerous it will be." -Martin pall
- "5G is designed to be extraordinarily highly pulsed and will therefore be vastly more dangerous as a consequence."
- War games memo (eh)
- "Since, then the following US scientists have been the victims of personality assassination attacks: Allan Frey, William Rea, David Carpenter, Om Gandhi, Cindy Sage; in Europe similar attacks have been done on Lennart Hardell, Franz Adikofer, Hugo Rüdinger, Dominique Belpomme, Olle Johansson and Dimitris Panagopoulos. I suspect that others should be included here, in addition. Each of these people has had a distinguished scientific career and the only reason each has been attacked is because each has had important scientific findings that the telecom industry did not like. It is not pleasant to be the target of such attacks but I take it as a badge of honor that I have been added to this list. The telecom industry obviously thinks it is to their advantage to perform personality assassinations, but anyone should see that this history confirms that they have no science. If they had science, they would be debating the science, not attacking individuals." ("This history confirms that they have no science") was in bold.
- Same as with glyphosate!!
-
- <https://ehtrust.org/wp-content/uploads/Wargaming-the-science-Memo-.pdf> is this the memo?
-
- <https://ehtrust.org/cell-phone-industry-wargame-memo-the-disinformation-campaign-to-confuse-the-public/>
-
- https://mysilvershield.com/en/blog/news/the-inconvenient-truth-about-cancer-and-cell-phones?srsId=AfmBOoojBsX73N24ss_VeWxW4BdINsXmR9ApcC434v1jjB9e36ECM1hb
- Harvard institute for ethics?
- Captured agency by norm alster?
- Children have high density of mast cells (see dr Igor belyaev's work), developing brain is especially sensitive to emfs, young tissues have more "extracellular water" (devra Davis shows that this leads to deeper penetration), and they have smaller heads.
- Nicholas Steneck wrote book on how Frey's research Suppressed? Eh I think I know some of Frey's story.

- Fatma Töre had shown that GSM radiation allowed proteins to leak from small blood vessels in the brain's dura mater into the meninges. - proteins cause headaches leads to edema?
- <https://www.tandfonline.com/doi/abs/10.1080/15368378409035971> shouldn't he be dead by now? This is how the eye somehow opens the brain to vgcc damage?
- <https://pubmed.ncbi.nlm.nih.gov/11055621/> this shows that leukemia doubles at 3-4 mG? (Is safety standard like 1mf? (More papers suggested on pubmed)
- <https://pubmed.ncbi.nlm.nih.gov/10944614/> this one found OR of 4.39 at 1.8mG for mutations in DNA repair genes?
- <https://pubmed.ncbi.nlm.nih.gov/18990717/> eh already have, but Alzheimers and neurological diseases double within 50 m of power lines (5-8 mG).
- <https://pubmed.ncbi.nlm.nih.gov/8320637/> elf blocks melatonin inhibition of breast cancer (at <12 mG)
- ELF safety limit is ~1000 mG at ICNIRP 1077
(<https://ehtrust.org/reducing-exposure-to-magnetic-electric-fields-and-electromagnetic-interference-in-your-home/> - this seems to put it at 2,000 occupational, 10,000 otherwise?)
- <https://pubmed.ncbi.nlm.nih.gov/11805581/> blank claims a 10x increase in miscarriage with electric blanket in the first trimester? Is that in this study? Miscarriages increase at 16 mG.
- <https://jamanetwork.com/journals/jamapediatrics/fullarticle/1107612?ref=theohioregister.com> every 1mG of emfs correlates to a 15% increase in asthma???? ***** Already have, but they have an obesity study from 2012
- (Can't find reviews, but 27 reviews on lowered fertility, 35 reviews on neurological effects including neurotransmitter changes, insomnia fatigue depression headaches, cognitive dysfunction/concentration, anxiety/stress, agitation, memory dysfunction etc. Major structural change in animals?)
- (This talk was around 2016)
- 26 reviews on DNA damage, single and double DNA breaks, oxidizes bases (8-HOdG) that cause cancer and germ line mutation?
- 16 reviews on apoptosis/programmed cell death?
- 28 review on oxidative stress/ free radical damage
- 16 reviews on endocrine/hormonal effects, including both steroid and non-steroid hormone systems, both increasing and decreasing
- 16 review in intracellular calcium (his VGCC stuff)
- 44 reviews on cancer, increases carcinogenesis, tumor promotion and progression, increased tissue invasion and metastasis
- 14 reviews on cardiac events via electrical control of the heart: tachycardia, arrhythmia, heart palpitations, sudden cardiac death.
- His 2016 paper found depression, insomnia headaches etc. 11 additional levies confirm this? 5 more on people living near cell phone towers/
- 38 eeg studies. So we know that the electrical activity of the brain IS changing
- Emf effects are cumulative?
- <https://www.eurekaselect.com/article/120618> -are there 18 different types of evidence on Alzheimers?

- *** what part of this data IS in question? Childhood brain tumors? Leukemia? Is that it? (Wait there was one review that found like 47 dangerous studies, 45 normal ones, can't remember.)
-
- <https://pubmed.ncbi.nlm.nih.gov/40932088/>
- Eh these argue that a hum is really bad for mental health, and therefore if other papers show that emf included a hum, that would also be bad for health?
-
-
-
- <https://jab.zsf.jcu.cz/pdfs/jab/2008/03/05.pdf>
- Jesus 34% of brain cells die in 4 weeks from 3g level radiation????? Vgcc blockers start it? Does this paper show this?
- "Obviously if we were as sensitive as rats we'd be gone from being exposed to all this radiation." -Martin pall, or some researcher
- "Both the animal studies and human epidemiological studies suggest that EMFs shorten the latency period of Alzheimer's. The normal 25 year latency period in humans may be shortened to perhaps 5 to 10 years. So here is the absolute nightmare scenario. We introduce a new highly pulsed EMF and because of the pulsation, it causes near universal extremely early onset Alzheimer's but we don't know it yet because we are still within the latency period so the Alzheimer's."***
- <https://pubs.acs.org/doi/10.1021/acsnano.5c22066> eh is there synergy? Is this crap?
-
- The Pity of Ware Explaining World War I Niall Ferguson?
- <https://www.youtube.com/watch?v=ATRa9bThFKg>
- Worst case scenario (one of them):
 - 1. Microwaves are genotoxic (widespread DNA damage)
 - 2. Germ line cells very effected (ie sperm)
 - 3. Only3 studies of mutations in germ line cells after emfs, all 4 show mutation increase
- <https://pubmed.ncbi.nlm.nih.gov/7506381/>
- <https://onlinelibrary.wiley.com/doi/full/10.1111/j.1365-2605.2005.00531.x>
- already have 3rd one
- Therefore, we could be (and are) destroying our inheritance- why doesn't pall know about this???
-
- Come back to pall stuff at the end
- [https://www.researchgate.net/publication/228993615_Provocation_study_using_heart_rate_variability_shows_microwave_radiation_from_24_GHz_cordless_phone_affects_autonomic_nervous_system_haves_heart_rate_variabiliyt_\(cordless_phone!\)](https://www.researchgate.net/publication/228993615_Provocation_study_using_heart_rate_variability_shows_microwave_radiation_from_24_GHz_cordless_phone_affects_autonomic_nervous_system_haves_heart_rate_variabiliyt_(cordless_phone!)) Regulations are 1000 microwatts/m^2
- <https://esmed.org/MRA/mra/article/view/2605> replication study?

- https://www.ramazzini.org/wp-content/uploads/2008/03/Non-thermal-effects-and-mechanisms-of-interaction-between-electromagnetic-fields-and-living-matter_2010.pdf ** find the full report here? Rammazini are a big deal?
- <https://heartmdinstitute.com/detox-toxins/wi-fi-schools-health-hazard/> eh crap
- https://www.youtube.com/watch?v=_EI9fZX4iww come back or delete?
- <https://pubmed.ncbi.nlm.nih.gov/36253855/> ** this one looks BIG. Oh wait, I hared all about this?
- <http://www.icbe-emf.org> eh?
- <https://pubmed.ncbi.nlm.nih.gov/1397839/> eh am I hitting this stuff to death?
-
- Blood sugar or blood pressure drops by like 30% in this case studies? One case was able to halve his insulin just by putting in dirty electricity filters? (Already have this haves study from like 2008
-
- https://youtu.be/2JI7-9_FRYc?is=uw1BwGAFOn4rOSEp the testimony around 3 minute mark here. Lists some studies too. And links in the description?
- 15 million children lost 10 iq points from leaded gasoline?
- Also some great stats on decline in motor fatalities
-
- https://youtu.be/8CgX_m0kxf4?feature=shared !!!!!!!!!!!!! Jesus Christ I can't we suppressed this danger to win the Cold War in the 50s?????!!!
- "You don't lose war because your army has too many cancers..." quote around 3 minute mark
- 1966 Heaith Stanaard on Electromagnetic Radiation developed by 15 people: 10 from the Armed Services, 1 from the Petroleum Institute, 1 from Space Administration, 1 from General Dynamics, 1 from the US Treasury, and 1 from the US Public Health Service.- according to Paul herloux (a really good one. Was he there or something?
-
-
- <https://youtu.be/R4nvpP6XmXI?is=-oW5yTVABDWaVS9r> this one is too amazing as well. Can I find the original? Safer emr?
- Lai found that 77% of neurological studies found an effects (333 of 435 since 2007)
- 70% of genetic studies found an effects (328 out of 466 since 1990)
- And 89% of oxidative stress papers found an effect (316/354 since 1997)
-
- In cypress they have common advertisementw warning about radiation? They say "don't irradiate me, learn how to protect me."
- <https://ehtrust.org/wp-content/uploads/PRESS-RELEASE-Cyprus-2019-Campaign-3.pdf>
- Did Joel moscovitz find this via a huge foia request??? (What- can I find what this is talking about?)
- California department of public health warns "Do not sleep wit your phone in your bed or near your head."?
-
- These are on ehtrust.org?

- 258 scientists from 44 countries made an emf appeal at emfscientist.org?
-
- There are new 5g towers in ny 10 feet from people's. Windows?
-
- <https://youtu.be/q8Jumm9Q5Ks?is=t7r-WyAiVE3ICvbL>
- Talk one earlier again
- "To widen the market and to narrow the competition, is always the interest of the dealers... The proposal of any new law or regulation of commerce which comes from this order, ought always to be listened to with great precaution, and ought never to be adopted till after having been long and carefully examined, not only with the most scrupulous, but with the most suspicious attention." - smith on capitalism, wealth of nations
- "It comes from an order of men, whose interest is never exactly the same with that of the public, who have generally an interest to deceive and even oppress the public, and who accordingly have, upon many occasions, both deceived and oppressed it."
-
- In 1952, 12,000 people died in 4 days in London from smog?
- What are air pollution levels now vs a generation ago???
- Gm supported leaded gasoline in 1921? Can I find out more about that?
- Schools can approach the emf thermal limit??
- School computers talk to eachtoher up to 99 in total from a company called village telco? So emfs are exponentially higher?
-
- At 17:49 pediatricians petitioned government to reevaluate standards and they refused?
- <https://www.researchgate.net/scientific-contributions/Giorgio-Alfonso-Lovisol-38936920>
- <https://www.science.org/content/article/emf-researcher-faked-data>
-
- Albumen is a toxicant?
- <https://pubmed.ncbi.nlm.nih.gov/28426166/> eh
- <https://pubmed.ncbi.nlm.nih.gov/17187929/>
- Bunch of papers at the end, couldn't catch them all. Jesus at the end!!!
- <https://youtu.be/aa3ztxiyMsw?is=oWmq7QKDWaCXifdF> this talk
- FCC limits are at 10,000,000 something for radio frequency (maybe mT?)
- Building biologists 0.1
- Cell phone minimum limit 0.001
- Natural radiation 0.000001? Would be 10^13 difference
-
- ***** gives natural levels!!!!
- So much in this talk. Orsaa database?
-
- <https://youtu.be/Lw03FexMATs?is=BrSDTnu5KmaHqAUd> another talk? Yeah looks great
-
-
- Bioinitiative report (updated) is really good?

-
-
- https://youtu.be/IU4t7gfhk94?is=Nn6j_4DLg5jfZ2Jn lawsuit 2021?*** government MANDATED that we check our safety standards and we didn't?
- Our limits can be hundreds of times those of others?
- Amazing quote at the ene
-
-
- <https://www.scrip.org/reference/referencespapers?referenceid=2916289> - vanishingly low levels of emfs can still cause harm?
- -Is this one a review of all the data?
- <https://www.nature.com/articles/s41598-018-22271-3> - 5g a nd honeybees
- <https://www.nature.com/articles/s41598-019-56948-0>
- <https://ieeexplore.ieee.org/document/10269454>
- https://www.youtube.com/watch?v=7RfxV0Gi_5Y&t=16s eh all this stuff here. NEPA?
-
- <https://pubmed.ncbi.nlm.nih.gov/34047144/> ***** (I think?)
- <https://pubmed.ncbi.nlm.nih.gov/34243228/>
- <https://pubmed.ncbi.nlm.nih.gov/34563106/>
- <https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2022.1000840/full>
- <https://pubmed.ncbi.nlm.nih.gov/35438055/>
- <https://pubmed.ncbi.nlm.nih.gov/37021652/>
-
-
- Emf damage has been studies in 5 animal kingdoms and taxa
- Lai has tabulated this with:
- 27 studies on rising background levels
- 124 animal/flora studies
- 59 genetic effects studies (12 on ELF, 47 on RF)
- 38 flora studies (16 on static magnetic field, 5 on pulsed magnetic fields, 8 on ELF magnetic fields, 9 on rf fields)
- 1000 citations in total somewhere !!!!! Something in here that no one had done before? Can I find it?
- A lot more low intensity studies in the 2010s? Plants and fauna respond well to static natural elf fields, but bad to ac elf and rf? Is rf a huge part of climate change and species loss? If it's destroying natural flora, couldn't that lead to carbon release as well?
- wildlife review was here
-
-
- "Putting in tens of millions 5G antennae without a single biological test of safety has got to be about the stupidest idea anyone has had in the history of the world"- Martin pall
-
- <https://pmc.ncbi.nlm.nih.gov/articles/PMC3856065/>

-
- <https://www.engineering.upenn.edu/~kfoster/kfoster.htm> bigot*** key to understand
-
- <https://ehtrust.org/science/science-on-health-effects-of-cell-phone-and-wireless-radiation/> *** good ones
- Ohm p ghandi for these next 2 papers. Was working with Motorola/DOD and lost all his funding when he published damaging data?
- <https://ieeexplore.ieee.org/document/539947> (shows that children and smaller adults abordb more radiation than larger adutls? We kind know this right?)
- https://scholar.google.com/citations?view_op=view_citation&hl=en&user=zYrXsikAAAAJ&citation_for_view=zYrXsikAAAAJ:u5HHmVD_uO8C
- https://www.healthandenvironment.org/docs/Gandhi_et_al_Printed_Version_2-14-121.pdf
- <https://scholar.google.com/citations?user=zYrXsikAAAAJ&hl=en>
- <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0006446> - Maybe the 25% sperm study?
- <https://pubmed.ncbi.nlm.nih.gov/31767903/>
-
- Is that almost down by half?
- <https://pubmed.ncbi.nlm.nih.gov/17482179/> - can I find the actual data? Des cell phone use 4hours a day cut sperm by half? Yeah that's true*****
- <https://pubmed.ncbi.nlm.nih.gov/15482762/> something about superoxides causing sperm damage? Fits with Martin pall's work?
-
- <https://mbcc.org/wp-content/uploads/Davis-Mass-Breast-Cancer-Presentation-2022.pdf> eh
- <https://gamzuletova.org/wp-content/uploads/2019/12/Breast-Cancer-and-Cell-Phones-A-Review-of-the-Evidence.pdf> eh
- The IACC advocated for further research that enver happened?
-
- <https://airestech.com/blogs/emf-education/hardell-group-mobile-phone-brain-tumor-research> (eh)
- <https://pubmed.ncbi.nlm.nih.gov/24064953/>
- <https://bioinitiative.org/lennart-scenihr-2013-comments/> eh/? Are these debates on the paper above?
- https://ec.europa.eu/health/scientific_committees/emerging/docs/emf_2.pdf
- file:///Users/paulmenker/Downloads/ijo_46_5_1865_PDF.pdf eh something else on the cerenat study in 2014?
-
- Interphone stuff? (Still can't remember if good or bad)
- <https://interphone.iarc.fr/background/>
- <https://www.sciencedirect.com/science/article/abs/pii/S0928468012001101>
- <https://www.emf-portal.org/en/article/16705>
- <https://emfexplained.info/?Page=24488>

- <https://link.springer.com/article/10.1007/s10654-007-9152-z>
- 3x higher brain cancer if you use a phone an hour a day for 5 years (not sure which are these from)
- 4-8x more brain cancer if phones regularly used before 20. Is brain cancer not increasing yet? (My generation would probably be the first) (less cell turnover in brain?)
- Took 40 years for brain cancer to develop in Hiroshima/ Nagasaki survivors? That would mean 2035-2050 (really 2050) is when we expect the collapse
- ***
- https://www.apiservices.biz/documents/articles-en/impact_mobile_phones_on_density_honeybees.pdf colony collapse disorder !!
- <https://www.microwavenews.com/RR.html> *** is this the lai one about bias?
- <https://www.powerwatch.org.uk/science/bias.asp>
- <https://www.sciencedirect.com/science/article/abs/pii/S0160412015301148>
- <https://ehtrust.org/the-majority-of-studies-find-cell-phone-and-wireless-radiation-effects-update-by-dr-henry-lai/>
- <https://pubmed.ncbi.nlm.nih.gov/31450976/>
- <https://pubmed.ncbi.nlm.nih.gov/33539186/>
- <https://pmc.ncbi.nlm.nih.gov/articles/PMC1247544/> ** debate?
- <https://pubmed.ncbi.nlm.nih.gov/31450976/> eh review?
- "If there is even a reasonable possibility that cell phone radiation is carcinogenic, the time for action in the public health and regulatory sectors is upon us. Even though the financial and social cost of restricting such devices would be significant, those costs pale in comparison to the cost in human lives from doing nothing, only to discover thirty or forty years from now that the early signs were pointing in the right direction. If the probability of carcinogenicity is low, but the magnitude of the potential harm is high, good public policy dictates that the risk should not be ignored." - us district court ruling 2014 (can I find the actual court documents/citations?)
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- "The City of Berkeley requires that you be provided the following notice:
- To assure safety, the Federal Government requires that cell phones meet radio frequency (RF) exposure guidelines. If you carry or use your phone in a pants or shirt pocket or tucked into a bra when the phone is ON and connected to a wireless network, you may exceed the federal guidelines for exposure to RF radiation. Refer to the instructions in your phone or user manual for information about how to use your phone safely." - cell phone right to know ordinance in Berkeley in 2015
- Vodafone has issued warning too
- SAR set up by a mannequin in 1996
- <https://pubmed.ncbi.nlm.nih.gov/29884550/>
- <https://link.springer.com/article/10.1007/BF00834020>
-
- <https://pubmed.ncbi.nlm.nih.gov/26686296/> decreased brain cells in animals exposed as adults/prenatally?
- <https://pubmed.ncbi.nlm.nih.gov/30044230/> emfs reduce memory in teens?

- <https://pubmed.ncbi.nlm.nih.gov/22428084/> hyperactivity and worse memory after prenatal exposure in mice?
- <https://www.sciencedirect.com/science/article/abs/pii/S001393512031402X> hyperactivity in children?
- <https://www.sciencedirect.com/science/article/pii/S1319562X21007518>
- <https://www.sciencedirect.com/science/article/pii/S1319562X21001017>
-
- Synergy!! Can I get a quantification of how much worse? (eh delete?)
- <https://pubmed.ncbi.nlm.nih.gov/22112647/> eh? I have this one right?
-
- <https://pubmed.ncbi.nlm.nih.gov/32199316/> !!!!!!!!!!!!!!!
- 300 per reviewed publications between 1990 and 2015 describing 1127 experiments in cell0based in vitro models.
- Out of 746 human cell experiments, 45.3% indicate cell change where 54.7% indicate no cell change? ($P < 0.001$?)
- Les differentiated cell types showed more effects
- 74.4% of faster growing cells from other species showed significant change from RF
- This confirms the Reflex project, belyaev and others?
-
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- Mature lymphocytes more resistant? "The younger the cell, the faster it grows, the more vulnerable it is."
-
- https://archive.cdc.gov/www_cdc_gov/eis/conference/dpk/Incidence-Rates-Pediatric-Cancer.html
- "The overall pediatric cancer incidence rates increased (AAPC=0.7, 95% CI, 0.5-0.8) during 2001-2014
- "Conclusions: "Increased overall rates of brain and hepatic cancer and decreased rates of melanoma ..since 2010. (Eh do either of these trends make sense? I have to double check my main statistics agin
- Can we estimate how many cancer deaths not due to smoking?
- Are cancer rates actually going down and am I wrong?
-
- https://www.researchgate.net/publication/352371614_Annals_of_Gastroenterology_and_Digestive_Disorders_Increased_Generational_Risk_of_Colon_and_Rectal_Cancer_in_Recent_Birth_Cohorts_under_Age_40_-the_Hypothetical_Role_of_Radiofrequency_Radiation_from_C
- Eh?
- <https://acsjournals.onlinelibrary.wiley.com/doi/10.3322/caac.70067> 3% growth in cancer in people 20-49, 0.4% in 50-64? That would be about 1.5% total, doubling every 40 years?
- <https://www.sciencedirect.com/science/article/abs/pii/S0013935119308102?via%3Dihub> double the risk of thyroid cancer for 1+ hours a day on a cell phone if you also have a certain SNP affecting DNA repair?

- <https://pubmed.ncbi.nlm.nih.gov/30196934/> did davis publish 600 papers? This is a final review?
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- <https://pubmed.ncbi.nlm.nih.gov/29530389/> ramazzini?
- <https://onlinelibrary.wiley.com/doi/10.1155/2017/8653286>
- <https://pmc.ncbi.nlm.nih.gov/articles/PMC5897318/>
- <https://www.besjournal.com/article/doi/10.3967/bes2019.107> -hematological and biochemical parameters?
-
- <https://pmc.ncbi.nlm.nih.gov/articles/PMC8048814/> (random)
- <https://www.sciencedirect.com/science/article/abs/pii/S0034528823001236>
-
- Ehtrust.org ? A call to end 5g?
- <https://pubmed.ncbi.nlm.nih.gov/22112647/> already have, but this basically tripled sperm dan fragmentation after 4 hours of a laptop on a lap
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- <https://www.emf-portal.org/en/article/9462> eh probably have
- https://www.researchgate.net/publication/10728347_Nerve_cell_damage_in_mammalian_brain_after_exposure_to_microwaves_from_GSM_mobile_phones
- [bs/10.1111/j.1749-6632.1975.tb36019.x](https://doi.org/10.1111/j.1749-6632.1975.tb36019.x)
- <https://www.nature.com/articles/srep41129>
- <https://pubmed.ncbi.nlm.nih.gov/19345073/>
- <https://www.semanticscholar.org/paper/Radiofrequency-and-Extremely-Low-Frequency-Field-on-Nittby-Grafstr%C3%B6m/afc9799c1f38f215e34258070902fb17bde09570>
- <https://pubmed.ncbi.nlm.nih.gov/15768430/>
- <https://portal.research.lu.se/en/publications/permeability-of-the-bloodbrain-barrier-induced-by-915-mhz-electro/>
-
- <https://pubmed.ncbi.nlm.nih.gov/28777669/>
-
- <https://pubmed.ncbi.nlm.nih.gov/9261543/> eh already, have but "A progressive decrease in the number of newborns per dam was observed, which ended in irreversible infertility."
- **** 5th generation complete infertility(would be sometime around 2100)
-
- <https://pubmed.ncbi.nlm.nih.gov/18246230/> "Exposure of pregnant women to mobile phone significantly increase fetal and neonatal heart rate, and significantly decreased the cardiac output."
- <https://pubmed.ncbi.nlm.nih.gov/19671630/> *? "I was found that 900 megahertz of electromagnetic field significantly reduced the total pyramidal cell number in the cornu ammonis (p=0.001). Therefore, although its exact mechanism is not clear, it is

suggested that pyramidal cell loss in the cornu ammonis could be due to the 900 mega-hertz electro-magnetic field exposure in the prenatal period."

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- "It's obvious that the immune system. Tries to fight this, but eventually leaks."
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- Biological effects found as low as 0.000021-0.0021 W/kg.
- <https://bioinitiative.org/wp-content/uploads/pdfs/BioInitiativeReport-RF-Color-Charts.pdf>
-
- <https://bioinitiative.org/> **** stuff on the right here
-
- <https://www.sciencedirect.com/science/article/pii/S0013935124000288> 10 w/m² (10⁷ microwatts/m²) is the FCC/ICNRIP level for personal safety, 5x higher for industry.
- Bioinitiative recommends 3 μw/m².
- During big solar storms, sun gives us 0.1 μw/m²?
- Normal background level is between 0.000001-0.00000000001 uW/m² (Olle Johansson, Karolinska Institutet 1997,) as the hygienic background level?
- This is 10⁻⁶ μw /m² - 10⁻¹¹ μw/m² (or 1 pw/m² - 10 attowatt/m²). Compared to 10 watts, that's 10¹³ - 10¹⁸ ish different)
- Include this somewhere?
- <https://www.electrosmogprevention.org/smart-meter-resources-links/safety-guidelines-for-rf-exposure/> (gives some sort of citation for Olle's number, need to find the original one)
- 1 quintillion times higher? Does this give me actual realistic estimates? (Is that the right number?)
- <https://pubmed.ncbi.nlm.nih.gov/28203122/> ***** antibiotic resistance. The one that scares olle the most
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- By 2050, 10 million or more will die worldwide from antibiotic resistance yearly?
- "If I was the prime minister I wouldn't sleep. I would be up in my bed screaming." - olle Johansson (about emf- induced antibiotic resistance, but probably true everywhere <https://youtu.be/7i-Ki5dFXdl?is=c4yHEs5tBBvLnroj>)
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- Olle Johansson papers in 1983, 1985, 1989, 1992, 1995, 1998, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017... and 2018 (Copenhagen), 2019, 2020...?
- "This is the largest full-scale experiment ever: What happens when we, 24-hours around the clock, wherever we are, allow ourselves and our children to be used as guinea-pigs, whole-body-irradiated at colossal exposure levels!) for the rest of our lives?" - Johansson
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- 10 research groups proposed that EMFs are the primary (or a substantive) cause of autism (probably mid 2010s)
- 16 reprotos on insomnia,
- 15 on headache
- 11 on depression
- 11 on fatigue
- 10 on dysesthesia (vision /hearing/olfactory dysfunction)
- 9 on concentration/attention
- 8 each on memory changes, dizziness, irritability, loss of appetite/weight issues,
- 6 on restlessness/tension/agitation/discomfort
- 6 on nausea,
- 6 on skin tingling/burning/dermographism
-
- [https://onlinelibrary.wiley.com/doi/10.1002/\(SICI\)1521-186X\(1997\)18:6%3C455::AID-BE M8%3E3.0.CO;2-1](https://onlinelibrary.wiley.com/doi/10.1002/(SICI)1521-186X(1997)18:6%3C455::AID-BE M8%3E3.0.CO;2-1) “Magras and Xenos showed that pairs of mice mated at two exposure levels near and "antenna park" of large numbers of broadcasting antennae (but still within safety standards) went through only two (higher exposure) or four matings (lower exposure) in less than 5 months before they became completely sterile.” **
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- “People in their 30s coming down with Alzheimer’s disease? Unheard of in previous times.”
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- <https://pubmed.ncbi.nlm.nih.gov/19268425/> from pall, showing that calcium has a role in Alzheimers
- <https://pubmed.ncbi.nlm.nih.gov/24026422/> higher vgcc activity (in other context) associated with Alzheimers too?
- <https://pubmed.ncbi.nlm.nih.gov/23523687/> - these two mechanisms might therefore be associated with Alzheimers?
- <https://pubmed.ncbi.nlm.nih.gov/23523687/>
- Alzheimers has a 20-30 year latency period typically, so we should just be expecting to see the effects now?
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- Eh
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- Papers on genetic effects: Phillips [98]; Sykes [01]; D'Ambrosio [02]; Tice [02]; Gadhia [03]; Mashevich [03]; Ono [04]; Sarimox [04]; Aitken [05]; Belyaev et al. [05, 06]; Diem [05]; Gandhi and Anita [05]; Gandhi and Singh [05]; Markova [05]; Zotti-Martelli [05]; Ferreira [06]; Lixia [06]; Nikolova [05]; Paulraj and Behari [06]; Sun [06]; Zhang [06]; Deluliis [09]; Kesari [09] (I know I have at least a good fraction of these)

- Papers on oxidative stress/free radical damage: Lai and Singh [97a, b, 04]; Moustafa [01]; Irmak [02];
- Stopczyk [02]; Ayata [04]; Ikan [04]; Oktem [05]; Ozguner [04, 05, 06]; Yariktas [05]; Koylu [06]; Oral [06]; Yurekli [06]; Balci [07]; Friedman [07]; Guney [08]; Hoyta [08]; Wu [08]; Deluliis [09]; Kesari [09]; Mailankot [09]
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- Brain/EEG papers: Von Klitzing [95]; Mann and Roschke [96]; Eulitz [98]; Freude [98]; Borbely [99]; Freude [00]; Huber [00]; Hietanen [00]; Krause [00]; Lebedeva [00]; Jech [01]; Lebedeva [01]; Huber [02]; Croft [02]; D'Costa [03]; Huber [03]; Kramarenko [03]; Marino [03]; Hamblin [04]; Hinrich and Heinze [04]; Krause [04]; Papageorgiou [04]; Vorobyov [04]; Curcio [05]; Huber [05]; Loughran [05]; Aalta [06]; Ferrer[06]i ; Krause [06] Papageorgiou [06]; Krause [07]; Vecchio [07]; Hung [07]; Nittby [08]; Narayanan [09]
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- Brain morphology/ cell death: Persson [97]; Salford [03]; Markkanen [04]; Marinelli [04]; Zmyslony [04]; Nikolova [05]; Panagopoulos [06]; Zheo [06]; Del Vecchio [09]; Nittby [09]
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- <https://magazine.washington.edu/feature/uw-researchers-wake-up-call-on-cellphone-radiation-is-finally-getting-heard/> reflex project and adolf from the tobacco companies ?
- Devra Davis emf book
- Grimes Jama paper? Some absurd bullshit, eh trust wants it retracted?
-
-
- Environmentalists are unaware of this work showing that animals are effected?
- <https://www.bemri.org/publications/wildlife-and-plants/wildlife/259-the-effects-of-microwave-radiation-on-the-wildlife-preliminary-results/file>
- <https://www.sciencedirect.com/science/article/abs/pii/S0928468009000030>
- https://www.researchgate.net/publication/225747158_The_incidence_of_electromagnetic_pollution_on_wild_mammals_A_new_poison_with_a_slow_effect_on_nature
- <https://pubmed.ncbi.nlm.nih.gov/25089692/>
- <https://pubmed.ncbi.nlm.nih.gov/25747364/>
- <https://pubmed.ncbi.nlm.nih.gov/26615484/>
- <https://pubmed.ncbi.nlm.nih.gov/23261519/>
- https://www.researchgate.net/publication/251669858_Mobile_telephony_radiation_effects_on_living_organisms
- Sivani, S., Sudarsanam, D., 2013. Impacts of radio-frequency electromagnetic field (RF-EMF) from cell phone towers and wireless devices on biosystem and ecosystem - a review. Biology and Medicine, 4 (4): 202-216,
- <https://www.emf-portal.org/en/article/search/v2/results?query=emf> Jesus at least 20,000 studies here?
- Hundreds of studies on vgccs?
- <https://www.sciencedirect.com/science/article/abs/pii/S0006291X12015975> pulsed microwave emf affects ca signaling and NO synthesis (next picture next)