

WORDS AND PICTURES CANNOT POSSIBLY CONVEY THE MASSIVE INCREASE IN OUR EXPOSURE TO ARTIFICIAL ELECTROMAGNETIC FIELDS OVER THE LAST SEVERAL DECADES. IF YOU ARE AWARE OF EMF, YOU ARE NO DOUBT DEEPLY CONCERNED ABOUT FUTURE DAMAGE TO LIVING ORGANISMS WITHIN DIVERSE ECOSYSTEMS. THIS MAP OFFERS LINKS TO THE FEW STUDIES AND REFERENCES THAT HAVE BEEN MADE TO THE RISKS WHICH OCCUR FROM ACCUMULATION OF EXPOSURES OVER A LIFETIME. MORE INFORMATION CAN BE EXTRAPOLATED FROM STUDIES LINKED IN MAPS ON THE ENVIRONMENT AND HUMAN PHYSIOLOGY.

HOW DO WE MEASURE CURRENT OR CUMULATIVE EXPOSURES?
 HOW DO WE SEPARATE EMF EXPOSURES FROM OTHER EXOGENOUS TOXINS?
 SHOULD WE SEPARATE EMF EXPOSURES FROM OTHER EXOGENOUS TOXINS?
 HOW DO WE SEPARATE EMF RELATED EFFECTS FROM OTHER CAUSES OF ILLNESS?
 IS THIS EVEN POSSIBLE TO STUDY?



MATERNAL CUMULATIVE EXPOSURE, RISKS TO CHILDREN

ADDITIVITY, REFLECTIVITY

- [Robert Kane, Russian Roulette: "repeated insults"](#)
- [EPA: no agency policies exist for long-term exposures](#)
- [Buchner, Eger: Long term RF exposure, neurotransmitters](#)
- [Santa Cruz Health Services Agency: "...exposure is additive.."](#)
- [Insurance firm warns of losses from "unforeseen consequences" of EMF](#)
- [Arthur Firstenberg: two hours on cell phone, "permanent brain damage"](#)

Electromagnetic Exposures

- Static electric, magnetic fields
- Sine wave alternating electric, magnetic fields
- Square and other shaped waves
- Higher frequency electromagnetic fields
- Single frequencies or mixed
- Base frequencies plus carried frequencies
- Spread spectrum mixed
- Pulsed emissions, regular or transient
- Twisted waves
- Spaces between frequencies maximally filled
- Varying periods of exposure to single frequencies
- Varying periods of exposure to mixed frequencies
- Combinations that change all day

LIFE-LOGGERS

EMF: DO WE KNOW THE EFFECT OF LIFETIME EXPOSURE

Selection from PowerWatch.org

1800 MHz (cell, cordless phone range), microW/m²

Cosmic background level	0.0000000001
Natural background, all frequencies	0.000001
Altered EEG, humans	0.000001
PowerWatch, suggested sleeping	0.01
PowerWatch, suggested waking	1.
WHO Safety Guidelines	9,000,000.
FCC (USA) Allowance	10,000,000.

Secondhand EMF

- [Secondhand Exposure, Cellphone](#)
- [Reflected exposures inside busses](#)
- [Secondhand radiation on a train](#)
- [Exposure, personal phone, stand-by](#)
- [An Emerging Public Health Problem](#)
- [Hotspots, reflected exposures in transport](#)
- [Passive exposure increased by reflection](#)
- [Exposure to public separate from exposure to user](#)

Some Mechanisms for Cumulative Effects:

- Physiologic state, stresses in addition to EMF
- Damage to gene pool and de novo mutations
- Reduced melatonin and reduced methylation/repair
- Reduced melatonin and reduced growth hormone/repair
- Nutrient triage, development of deficiencies, rapid aging
- Accelerating damage due to free radical cascades
- Accelerating damage due to environmental EMF increases
- Loss of safe space protection, physiologic recuperation



Related Maps

- [Hormesis](#)
- [Multiple-Hit](#)
- [Nonlinearity](#)
- [Smart Cities](#)
- [Nutrient Triage](#)
- [EMF plus Toxins](#)
- [Wireless Commons](#)
- [Antenna Illness Clusters](#)
- [Methylation, Glutathione](#)
- [Mechanisms of BioEffects](#)

Articles, Overviews

- [Highest health risk?](#)
- [The additive principle](#)
- [Longterm effects EMR](#)
- [Bio. Effects of weak EMF](#)
- [30 min. day, 3 X cancer risk](#)
- [Video: Accumulated exposure risk](#)
- [Wearable tech. adds RF to other devices](#)

EXPOSURE UNCERTAINTIES, ADDITIVE APPROACH

Studies

- [Age-Dependent Effects](#)
- [Long term ELF, pituitary changes](#)
- [Study on household appliance variation](#)
- [Blood parameter changes, long-term ELF](#)
- [Accumulation through additivity, reflectivity](#)
- [Long term exposure, mice, cancer, infertility](#)
- [Experimental model for ELF-EMF: Concern](#)
- [Long term exposure and hormonal changes](#)
- [Long term MW may inhibit learning, memory](#)
- [MW, long term, cancers, radar, mobile comm.](#)
- [Long-term use of cell phones, brain tumors](#)
- [ELF, long-term exposure, caspase, apoptosis](#)
- [CNS cancer, accumulated cellphone exposure](#)
- [Pseudo-iron deficiency, EMF, cumulative dose](#)
- [Underestimation of exposures, esp. in children](#)
- [Long-term cellphone exposure, stress, cortisol](#)
- [Accumulated peak measurements, ELF, leukemia](#)
- [ELF long term, neurobehavioral changes, children](#)
- [Interviews on RF appliance use history inaccurate](#)
- [Glioma, wireless phones, heredity, long-term use](#)
- [EMF Biological Effects, Public Exposure Standards](#)
- [RF, long term exposure, social memory deficit, rats](#)
- [Review of studies on long-term use and tumor risk](#)
- [RF, long-term, altered male reproductive parameters](#)
- [Autoimmune process, long-term low level exposure](#)
- [Prenatal to death exposure, rats, brain/heart tumors](#)



SMART METERS DON'T EVER STOP

SCHOOL EXPOSURES, LONG-TERM RISKS IGNORED

HIGH SMARTPHONE RISK

Home: [Oscillatorium](#)
 Newest version [this map](#)
 Date of this update: 02-12-20

Harmful effect of EMF exposure on living tissue depends primarily on the frequency (wavelength) and density of the field and on the exposure time.
[D'Angelo et al](#)

The risk for any brain tumor was four times higher for those using a mobile phone for five or more years, compared to others in the same rural region that did not use the devices.
[Health and Stress](#)

At least 60 peer-reviewed papers report biological effects at very low intensities of radio frequency radiation but these are all of short exposure. Long-term exposure data are scarce. What these long-term studies show are the following:

- effects differ based on exposure duration.
- some effects occur only after either prolonged or repeated exposure but not after short-term exposure.
- some effects disappear after prolonged or repeated exposure (due to habituation).
- an organism becomes more sensitive after repeated exposure.
 Magda Havas' public site

LONG TERM MW EXPOSURE AND CANCER RISKS

ELON MUSK, AND A PLANETARY MICROWAVE BLANKET

