

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of )  
 )  
Reassessment of Federal Communications ) ET Docket No.  
13-84 )  
Commission Radiofrequency Exposure Limits and )  
Policies )  
 )  
Proposed Changes in the Commission's Rules ) ET Docket No. 03-137  
Regarding Human Exposure to Radiofrequency )  
Electromagnetic Fields )  
 )

To: Office of the Secretary  
Federal Communications Commission  
Washington, DC 20554

REPLY Filed by: Nina Beety  
P.O. Box 1505  
Monterey, CA 93942  
nbeety@netzero.net  
831-655-9902

November 18, 2013

In order to protect human and environmental health, the FCC must take these actions as a result of its review of RF guidelines:

- Establishment of FCC standards, instead of guidelines
- Strict enforcement of those standards
- Biologically based standards  
starting at the “precautionary action level of 0.0003 microW/cm<sup>2</sup> to 0.0006 microW/cm<sup>2</sup>” suggested in the 2012 Bioinitiative Report update or the Austrian Medical Association’s recommendations for “normal” exposures no higher than .0001 microW/cm<sup>2</sup>.
- Standards that protect the most vulnerable in society and pertain to men, women, children, babies, pregnant women, the elderly, the infirm, those who are electrohypersensitive (EHS), those who have compromised immune systems, those with metal implants, those with medical implants, healthcare facilities with health monitoring equipment.
- Standards updated every two years at a minimum
- No exemptions; standards that protect from all forms of RF, including cellular communications, commercial telecommunications (AM/FM, TV, UHF, VHF), satellites, military uses, hobby/HAM radio, emergency communications
- Standards that reflect weight of evidence and the precautionary principle, and respect all life.

Why are the present “guidelines” inadequate?

- Limitations of present “guidelines”
- Extensive research showing harm below present “guidelines”

Norbert Hankin, U.S. Environmental Protection Agency (EPA), 2002:

“The FCC’s current exposure guidelines, as well as those of the Institute of Electrical and Electronics Engineers (IEEE) and the International Commission on Non-ionizing Radiation Protection (ICNIRP), are thermally based, and do not apply to chronic, nonthermal exposure situations. They are believed to protect against injury that . . . result(s) in tissue heating or electric shock and burn. . . The FCC’s exposure guideline is considered protective of effects arising from a thermal mechanism . . . the generalization by many that the guidelines protect human beings from harm by any and all mechanisms is not justified.”

[http://www.emrpolicy.org/litigation/case\\_law/docs/noi\\_epa\\_response.pdf](http://www.emrpolicy.org/litigation/case_law/docs/noi_epa_response.pdf)

Michael Bevington, 2008

...a standard textbook on bioelectromagnetics (2007 edition) states that ‘the biophysical lore prevailing until the late 1980s and lingering to this day’ was that external EFs had no effect on human tissue unless they could trigger an excitable membrane, such as in the heart by a pacemaker, produce heating (thermal), or move an ion along a field gradient. ‘However, the position had to be changed as the evidence for weak (nonthermal) EMF bioeffects became overwhelming’.(3)

(3) Barnes, Frank S., and Greenebaum, Ben (edd.), Handbook of Biological Effects of Electromagnetic Fields: Biological and Medical Aspects of Electrical

Fields, CRC Press, 3rd ed. based on updated literature reviews to mid 2005, 2007), p.377.

Attitudes to the health dangers of non-thermal EMFs, 2008

[http://www.powerwatch.org.uk/news/20080117\\_bevington\\_emfs.pdf](http://www.powerwatch.org.uk/news/20080117_bevington_emfs.pdf)

Santa Cruz County Health Department, January 13, 2012

“There are no current, relevant public safety standards for pulsed RF involving chronic exposure of the public, nor of sensitive populations, nor of people with metal and medical implants that can be affected by localized heating and by electromagnetic interference...”

“...FCC guidelines are irrelevant and cannot be used for any claims of [wireless] SmartMeter safety unless heat damage is involved.”

Health Risks Associated with Smart Meters,  
Health Officer Dr. Poki Stewart Namkung MD, MPH;  
Attachment B, B1, B2

[http://sccounty01.co.santa-cruz.ca.us/bds/Govstream/BDSvData/non\\_legacy/agendas/2012/20120124/PDF/041.pdf](http://sccounty01.co.santa-cruz.ca.us/bds/Govstream/BDSvData/non_legacy/agendas/2012/20120124/PDF/041.pdf)

Government of India, Ministry of Environment and Forests (2011):

The adverse effects of electromagnetic radiation from mobile phones and communication towers on health of human beings are well documented today.”

Report on Possible Impacts of Communication Towers on Wildlife  
including Birds and Bees, October 2011

[http://moef.nic.in/downloads/public-information/final\\_mobile\\_towers\\_report.pdf](http://moef.nic.in/downloads/public-information/final_mobile_towers_report.pdf)

India has taken a series of actions lately including making their exposure limits stricter.

The Swiss telecom company Swisscom (2004):

“The influence of electrosmog on the human body is a known problem.”

Reduction of Electrosmog in Wireless Local Networks,  
Patent Application by Swisscom AG, Sept. 2, 2004,  
cited in The Swiss Experience, Magda Havas, p. 3

[http://www.safeschool.ca/uploads/WiFi\\_Swisscom\\_Patent.pdf](http://www.safeschool.ca/uploads/WiFi_Swisscom_Patent.pdf)

ECOLOG Institute report for T-Mobile, 2000:

This review of over 220 peer-reviewed and published papers found strong indications for the cancer-initiating and cancer-promoting effects of high frequency electromagnetic fields used by mobile telephone technology. Experiments on cell cultures at power flux densities much lower than the guidelines, yielded strong indications for genotoxic effects of these fields, like single and double stranded DNA breaks and damage to chromosomes. The findings that high frequency electromagnetic fields influence cell transformation, cell growth promotion and cell communication also point on a carcinogenic potential of the fields used for mobile telephony. The study also found teratogenic effects (birth deformities) and loss of fertility in animal studies. Moreover, disruptions of other cellular processes, like the

synthesis of proteins and the control of cell functions by enzymes, have been demonstrated.

Numerous experiments on humans as well as on animals proved effects on the central nervous system, which reach from neuro-chemical effects to modifications of the brain potentials and impairments of certain brain functions. Loss of memory and cognitive function, for instance, have been demonstrated by animal experiments. From experiments with volunteers, who were exposed to the fields of mobile telephones, there is clear evidence for influences on certain cognitive functions. Possible risks for the brain also arise from an increased permeability of the blood-brain barrier to potentially harmful substances, observed in several experiments on animals exposed to mobile telephone fields.

The ECOLOG report also found indications for disruptions of the endocrine and the immune system. High frequency electromagnetic fields cause stress reactions, showing up in an increased production of stress hormones in experimental animals and they lead to a reduction of the concentration of the hormone melatonin in the blood of exposed animals and humans. Melatonin has a central control function for the hormone system and the diurnal biological rhythms and it is able to retard the development of certain tumours.

In sum, the ECOLOG report came to dramatically different conclusions than the Stewart Report and called for an immediate downward regulation of the power flux density that should be allowed by the guidelines, by a factor of 1,000

<http://www.hese-project.org/hese-uk/en/niemr/ecologsum.php>

July 2008: U.S.— Dr. Ron Herberman, Director, University of Pittsburgh Cancer Institute, writes memo to staff and students—

“Do not allow children to use a cell phone, except for emergencies.”

“Only use your cell phone to establish contact or for conversations lasting a few minutes, as the biological effects are directly related to the duration of exposure. For longer conversations, use a land line with a corded phone, not a cordless phone, which uses electromagnetic emitting technology similar to that of cell phones.”

[http://www.upci.upmc.edu/news/upci\\_news/072308\\_celladvisory.cfm](http://www.upci.upmc.edu/news/upci_news/072308_celladvisory.cfm)

removed

[http://old.post-gazette.com/downloads/20080722upci\\_cellphone\\_memo.pdf](http://old.post-gazette.com/downloads/20080722upci_cellphone_memo.pdf)

July 2012: U.S. -- American Academy of Pediatrics to FCC:

“Children are not little adults and are disproportionately impacted by all environmental exposures, including cell phone radiation. In fact, according to IARC, when used by children, the average RF energy deposition is two times higher in the brain and 10 times higher in the bone marrow of the skull, compared with mobile phone use by adults.”

The American Academy of Pediatrics supports Dennis Kucinich’s HR 6358, which calls for biologically-based national standards.

[http://kucinich.house.gov/uploadedfiles/aap\\_support\\_letter\\_cell\\_phone\\_right\\_to\\_know\\_act.pdf](http://kucinich.house.gov/uploadedfiles/aap_support_letter_cell_phone_right_to_know_act.pdf)

May 2011, World Health Organization International Agency for Research on Cancer:  
Declares radiofrequency electromagnetic radiation to be a Class 2B carcinogen.  
This is the same category as lead and DDT.

[http://www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208\\_E.pdf](http://www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208_E.pdf)

Biologist Andrew Goldsworthy:

Our present exposure to man-made microwaves is about a million billion billion (one followed by eighteen zeros) times greater than our natural exposure to these frequencies.

The Biological Effects of Weak Electromagnetic Fields, p. 4. March 2012

March 2012: Austrian Medical Association

Releases report “Guideline of the Austrian Medical Association (OAK) for the diagnosis and treatment of EMF-related health problems and illnesses (EMF syndrome)”.

In it, they propose setting preliminary “normal” exposure levels at .0001 microW/cm<sup>2</sup> (microwatts per cm<sup>2</sup>)—ten million times stricter than current FCC exposure guidelines (200-1000 microW/cm<sup>2</sup>).

<http://www.aerztekammer.at/documents/10618/976981/EMF-Guideline.pdf>

In 2007, the international Bioinitiative Report was published ([www.bioinitiative.org](http://www.bioinitiative.org)) which included over 1500 peer-reviewed studies on EMF and RF health effects. Now the Bioinitiative 2012 Report has been released:

...(E)vidence for risks to health has substantially increased since 2007 from electromagnetic fields and wireless technologies (radiofrequency radiation). The Report reviews over 1800 new scientific studies. Cell phone users, parents-to-be, young children and pregnant women are at particular risk.

<http://bioinitiative.org/report/wp-content/uploads/pdfs/BioInitiativePressRelease1-1-2013.pdf>

Summary of Key Scientific Evidence:

- Evidence for Damage to Sperm and Reproduction
- Evidence that Children are More Vulnerable
- Evidence for Fetal and Neonatal Effects
- Evidence for Effects on Autism (Autism Spectrum Disorders)
- Evidence for Electrohypersensitivity
- Evidence for Effects from Cell Tower-Level RFR Exposures
- Evidence for Effects on the Blood-brain Barrier
- Evidence for Effects on Brain Tumors
- Evidence for Effects on Genes (Genotoxicity)
- Evidence for Effects on the Nervous System (Neurotoxicity)
- Evidence for Effects on Cancer (Childhood Leukemia, Adult Cancers)
- Melatonin, Breast Cancer and Alzheimer’s Disease

- Stress, Stress Proteins and DNA as a Fractal Antenna
- Effects of Weak-Field Interactions on Non-Linear Biological Oscillators and Synchronized Neural Activity  
[www.bioinitiative.org](http://www.bioinitiative.org)

In 2007, the German research report *Birds, Bees and Mankind: Destroying Nature by Electrosmog* was translated into English. Below is an excerpt:

4.2.2 Primary mechanism found: Enzymes transferring electrons are magneto-sensitive

Stimulation of free radicals – including NO (nitrogen monoxide) – through physical fields and radiated fields is therefore scientifically and reliably proven. But viewed critically, this is no proof of damage unless the underlying primary mechanism is identified.

For this reason, we searched for a long time for a link to explain the damaging effect. And we have found it in one of the latest studies: The NADH oxidase enzyme exhibits a high – and quite reproducible – sensitivity for magnetic and electromagnetic fields of mobile phones (FRIEDMAN et al. 2007).

... The NOX family is also responsible for a large range of pathological processes, especially neurodegeneration and heart diseases (BEDARD et al. 2007).

These oxidase enzymes are magnetically sensitive due to their capability of shepherding electrons through plasma membranes. When electrons move, an electrical current flows that in turn builds up its own magnetic field and also generates electromagnetic high frequency oscillations through acceleration and deceleration of electron movement. All these processes create sensitivity to external fields.

The electron transfer is finally responsible for the production of superoxide radicals and other reactive oxygen species (ROS). The consequences of this are far reaching in completely different areas, because radicals and ROS are very aggressive. In this way, the destruction of viruses and bacteria is promoted, the creation of proteins is forced through reinforced gene expression and finally cell proliferation is supported at the cost of cell differentiation.

Over-stimulation is a threat. It is analogous to a drug or medicine: Dosed correctly, the substance can be beneficial; but overdosing can be poisonous. This is exactly what happens with permanent exposure to magnetic and electromagnetic fields.

...Because this mechanism is so important, we shall summarise it in one sentence: The serious pathological disruption is caused by exposure to magnetic and radiated fields resulting in the creation of additional reactive oxygen species (ROS) such as superoxide radicals and hydrogen peroxide, that combine with the increasingly produced NO to form extremely toxic peroxynitrite, that in turn reacts with hydrogens to form more hydrogen peroxide. The consequences of the pathological process are listed further down.

Many vital substances, required for functioning of the body, are rendered useless. If the cascade of effects is disrupted, the normal and healthy effects of NO are restored (HORNIG et al. 2001).

The NADH oxidase is important in another sense as well. It is also found in the cell nucleus where it can – depending on the redox system – control the gene expression, but can also damage genes (MASUKA, 2006).

Bees, Birds and Mankind: Destroying Nature by Electrosmog, Ulrich Warnke, 2007. p. 36.37

[http://www.kompetenzinitiative.net/assets/ki\\_beesbirdsandmankind\\_print.pdf](http://www.kompetenzinitiative.net/assets/ki_beesbirdsandmankind_print.pdf)

January 2012, Electromagnetic Biology and Medicine published research showing 143 proteins in the mammalian brain dysregulated by this radiation, including in regions of the brain important for learning and memory.

Brain proteome response following whole body exposure of mice to mobile phone or wireless DECT base radiation, Fragopoulou et al. Early Online: 1–25, 2012,

<http://www.emfacts.com/2012/01/new-paper-emf-effects-on-mouse-brain-proteome/>  
Release

March 2012, research from Yale University showed in-utero exposure to 800-1900 MHz radiation from cell phones (electric Smart Meters are 900 MHz) caused hyperactivity and impaired memory.

Barrie Trower, retired military microwave warfare expert:

13. Debriefing spies during The Cold War extended my military education into the full diversity of stealth microwave warfare and communication systems. In so doing, I learned a list of approximately 30 pulse frequencies that could induce some 50 physical and mental ailments by entrainment.

16. Portland Public Schools are transmitting electromagnetic, specifically MW, frequencies at low exposure levels compared to thermal levels. However, these exposure levels are very high compared to natural background levels at the frequencies deployed: 2.45 GHz and 5 GHz frequency, which means between 2.45 and 5 billion cycles per second. When I realized that power densities and frequencies similar to those used as weapons during the Cold War were being used as WI-FI in schools, I decided to come out of retirement...and explain exactly what the problem is going to be in the future.

Declaration of Barrie Trower, Lawsuit against Portland Public Schools' use of Wi-Fi, December 2011

<http://www.wirelesswatchblog.org/wp-content/uploads/2001/11/20-Amended-Declaration-of-Barry-Trower.pdf>

Trower has now published a report entitled “Wi-Fi in Schools: A Thalidomide in the Making. Who Cares?”

<http://www.electricalpollution.com/documents/WiFiAThalidomideInTheMakingWhoCares.pdf>

USA, 1955 – 1969:

...eleven large conferences took place under the title “Microwaves – Their Biologic Effects and Damages to Health”. The so-called Richmond Conference in 1969 presented such overwhelming facts that the (“Program for Control of Electromagnetic Pollution of the Environment”, published December 1971) government report had to be compiled. Besides the microwave symptoms

mentioned, gastric bleeding, leukemia, chromosome breakages, cancer, and clouding of the eye lenses were also observed by doctors in the USA.

Overloading of Towns and Cities with Radio Transmitters (Cellular Transmitter), Karl Hecht, Elena N. Savoley, IRCHET International Research Centre of Healthy and Ecological Technology Berlin – Germany  
[www.hese-project.org/hese-uk/en/niemr/hechtvortrag070724englisch.pdf](http://www.hese-project.org/hese-uk/en/niemr/hechtvortrag070724englisch.pdf)

Robert C. Kane, senior research scientist and product design engineer for Motorola, 2001:  
The bold step back ward is a historical accounting of the research that is available, has been available for forty years or more, and has been neglected or buried by an industry that will place its absolute need to sell products above the health and well-being of its own customers. The practice of producing such products can only be viewed as predatory.

(This book) is a commentary that presents a litany of past research studies, hundreds of research studies from the 1950s through the mid-1990s... These older studies are equally alarming (as current studies) in their findings of radiation exposure, DNA damage, chromosome damage, tissue damage, radiation absorption, cataract formation, tumor formation, memory loss, motor skills degradation, and more. There are many more studies, hundreds that might have been added, but the point is well made by those that are cited without the need to bludgeon the reader with more than what has been presented.

Cellular Telephone Russian Roulette, Robert C. Kane, 2001  
<http://microondes.wordpress.com/2010/04/17/robert-c-kane-cellular-telephone-russian-roulette/>

Naval Medical Research Institute, Zorach Glaser, 1972:  
Over 2300 references on the biological effects of radio frequency radiation  
<http://www.magdahavas.com/2010/07/05/pick-of-the-week-1-more-than-2000-documents-prior-to-1972-on-bioeffects-of-radio-frequency-radiation/>

Karl Hecht, Hans-Ullrich Balzer, 1997,  
Report for the German Federal Institute for Telecommunication based on 878 Russian studies from the years 1960-1996.  
<http://www.hese-project.org/hese-uk/en/niemr/hechtvortrag070724englisch.pdf>

Research has found impacts including:

DNA damage; calcium ion efflux, where calcium ions leave cell membranes, allowing those membranes to leak; sperm damage and dysfunction; cellular stress; increased risk for cancers and tumors, and cancer clusters around cell towers; seizures; microwave hearing; brain damage, brainwave alteration, and changed brain function; decreased melatonin and other hormones; heart problems, including tachycardia; cataracts; thyroid changes, including thyroid cell death; damage to the blood-brain barrier which keeps toxins and other substances out of the brain, increasing the risk of stroke, auto-immune diseases, and dementia; suspected damage to the blood-

placental barrier, which protects babies; links to autism, ADHD, Alzheimer's, stroke; changes in the blood, including rouleau formation, where RBCs clump together, raising the risk of thrombosis.

Dr. Ulrich Warnke details the devastating results of nitric oxide (NO) system disruption, including the impact to navigating creatures due to the presence of magnetite in their bodies, which is very sensitive to electromagnetic fluctuations. He further details the impacts to bees including to their immune system, sense of smell, learning ability, and navigation:

3.10 Disrupted NO (nitric oxide) system damages learning ability, olfactory orientation and the immune system

...The salient fact is that the NO system is affected by magnetic and electromagnetic oscillations and may in the worst case become totally disrupted – finally destroying molecular functions.

As in mammals, nitric oxide (NO) normally acts as a carrier of information in insects as well. The synthesis and excretion of NO is particularly high in the insect brain. In bees, NO plays a role in the ability to smell and in learning processes (MÜLLER, 1997).

As proven in humans, if the NO system of bees is disrupted through the effect of technical magnetic fields, they lose the ability to orientate themselves by smell and the vital learning programme also becomes defunct. But since NO also materially controls the immune system, disruptions to the NO household always affect the immune defences of the organism as well.

Bees, Birds and Mankind: Destroying Nature by Electrosmog, Ulrich Warnke, 2007. p. 28. 29

[http://www.kompetenzinitiative.net/assets/ki\\_beesbirdsandmankind\\_print.pdf](http://www.kompetenzinitiative.net/assets/ki_beesbirdsandmankind_print.pdf)

And we are witnessing the alarming loss of bees, including through unprecedented disease and the phenomenon of sudden hive collapse, where bees simply don't return to the hive.

The government of India, Ministry of Environment and Forests released a report in 2011 that looked at the impacts of the radiation from cell towers on wildlife, including bees.

...long-term studies have reported alarming observations, detecting negative consequences on immunity, health, reproductive success, behaviour, communication, co-ordination, and niche breadth of species and communities (Preece et al. 2007; Levitt and Lai 2010; Hardell et al. 2008; Hardell et al. 2007; Fernie and Bird 2001).

Report on Possible Impacts of Communication Towers on Wildlife including Birds and Bees, October 2011, p. 4, 6

[http://moef.nic.in/downloads/publicinformation/final\\_mobile\\_towers\\_report.pdf](http://moef.nic.in/downloads/publicinformation/final_mobile_towers_report.pdf)

Their study reviewed 919 studies. Of the 919 studies, they found that 593 showed a negative impact of cell towers on birds, bees, human, wildlife and plants, 196 were neutral or inconclusive, and 130 showed no impact.

An experiment with frog tadpoles conducted in a normal city environment near cell towers found 90% mortality and abnormal behavior and reactions in an unshielded aquarium,

compared to 4% mortality and normal behavior and reactions in a shielded aquarium. The study was for 2 months; the majority of the experimental group died within 6 weeks.

Balmori, A. 2010 Mobile Phone Mast Effects on Common Frog – The City Turned into a Laboratory, *Electromagnetic Biology and Medicine* 29: 31–35,2010  
[http://citizensforsafetechnology.org/uploads/balmori\\_city\\_as\\_lab1.pdf](http://citizensforsafetechnology.org/uploads/balmori_city_as_lab1.pdf)

A study of storks near cell towers found reproductive problems, aggression among nesting pairs, and infertility.

Balmori, A. 2005. Possible effects of electromagnetic fields from phone masts on a population of white stork. *Electromagnetic Biology and Medicine* 24:109-119  
[http://www.livingplanet.be/Balmori\\_EBM\\_2005.pdf](http://www.livingplanet.be/Balmori_EBM_2005.pdf)

Government of India report:

House Sparrow (*Passer domesticus*) is associated with human habitation and it is one of the indicator species of urban ecosystems. A declining population of the bird provides a warning that the urban ecosystem is experiencing some environmental changes unsuitable for living in the immediate future (Kumar, 2010). London has witnessed a 75 per cent fall in House Sparrow population since 1994, which coincides with the emergence of the cell-phone (Balmori, 2002). Electromagnetic radiation may be responsible, either by itself or in combination with other factors, for the observed decline of the sparrows in European cities (Balmori, 2009, Balmori & Hallberg, 2007).

p. 14

A study with mice near a cellular antenna park found irreversible sterility after 5 generations. Exposure was between 1.05 to 0.17 microW/cm<sup>2</sup>.

Magras 1997. Radio frequency radiation-induced changes in the prenatal development of mice. *Bioelectromagnetics* 18(6): 455-461.

Germany, 1998:

A study funded by the Bavarian State Government in Germany followed reports of adverse health effects in dairy cattle after a Telecoms mast had been erected for TV and cell phone transmission. Scientists documented a significant drop in milk yield and behavioral disorders in some of the cows that related to the microwave transmissions from the mast. When the cattle were moved to a farm 20 km away, their milk yield and behavior returned to normal within days.

When the cattle were returned to the mast environment their symptoms returned as well. Fodder analysis and the amount of feed could not account for the changes among the cattle. Analysis of aborted fetal material did not find any pathogens causing the abortion based on microscope and cultural examination and on serological tests. Autopsy of dead cows reported acute heart and circulatory collapse with internal bleeding from several organs. Exposure to RFR at the stable entrance was 80 microW/cm<sup>2</sup> and the highest reading reported on the farm near the stable was 350 microW/cm<sup>2</sup>. These values are much lower than the FCC guideline of 1000 microW/cm<sup>2</sup>.

Löscher and Käs, 1998. Conspicuous behavioural abnormalities in a dairy cow herd near a TV and Radio transmitting antenna. Practical Veterinary Surgeon 79:5, 437-444.  
Cited in Analysis of Health and Environmental Effects of Proposed San Francisco Earthlink Wi-Fi Network:

[http://www.buergerwelle.de/pdf/snafu\\_havas\\_wifi.pdf](http://www.buergerwelle.de/pdf/snafu_havas_wifi.pdf)

Belyaev (1996) found that microwave radiation altered the genetic structure of e coli bacteria at .0000000000001 microW/cm<sup>2</sup>; in other words, at 1/10,000,000,000,000th of 1 microW/cm<sup>2</sup>.

[http://www.electromagnetic-pollution.com/main/page\\_biological\\_effects\\_exposure\\_tables.html](http://www.electromagnetic-pollution.com/main/page_biological_effects_exposure_tables.html)

Biologist Andrew Goldsworthy:

Trees are now dying mysteriously from a variety of diseases in urban areas all over Europe and are also showing abnormal photoperiodic responses. In addition, many have cancer-like growths under the bark (phloem nodules) and the bark may also split so that the underlying tissues become infected. All of these can be explained as being a result of weak radio-frequency radiation from mobile phones, their base stations, WiFi and similar sources of weak non-ionising radiation. But first let us look at how living organisms use electric currents that they generate themselves and which perform vital functions in their normal day-to-day metabolism and growth. We will then go on to see how weak electromagnetic fields can disrupt these and bring about many unwanted biological effects.

Why Our Urban Trees are Dying, 2011. Dr. Goldsworthy is retired and was an Honorary Lecturer, Imperial College, London

<http://www.mastsanity.org/health/research/299-why-our-urban-trees-aredying-by-andrew-goldsworthy-2011.html>

Wolfgang Volkrodt and Ulrich Hertel

“...There is also this important fact: any tree may act as a receiving dielectric rod or monopole antenna with the ability to both absorb energy from the wave passing by and to scatter the wave in many directions. If the polarization of the transmitting tower antenna matches the particular tree or trees (i.e. vertical orientation of the antenna which is usually the case for collinear dipole arrays on towers), maximum coupling or absorption of the wave energy by the tree will occur. Polarization and conduction currents will generally flow to the root system.

Chapter 11:“Brief Overview of the Effects of Electromagnetic Fields on the Environment” by Raymond S. Kasevich, BSEE, MSE, PE, Registered Professional

Electrical ;Cell Towers: Wireless Convenience or Environmental Hazard? Proceedings of the ‘Cell Towers Forum’ State of the Science/State of the Law, edited by B. Blake Levitt (2001)

Volkrodt provides evidence in his papers that the decimation of forests is not caused by acid rain but by the acidification of the soil due to “electrosmog.”

“Microwaves are ‘received’ by our trees and finally converted into electrical currents which flow into the soil....A type of electric rectification takes place within the cell membranes. In turn, the direct current that spreads from the roots into the soil causes a type of electrolysis. And this, in turn – and not ‘acid rain’ – leads to the soil ‘acidification’ which is being repeatedly observed in the ground under trees exhibiting the new type of forest damage.”

Are Microwaves faced with a fiasco similar to that experienced by nuclear energy? 1991

## Official statements by agencies, governments, medical and scientific professionals include:

2002: Germany –

Freiburger Appeal (by 2003, signed by over 2000 healthcare specialists)

<http://www.starweave.com/freiburger/>

December 2005: Austria – Salzburg Region Health Department:

“Official advice is not to use WLAN and DECT in schools or kindergartens.”

<http://www.antennafreeunion.org/salzburg.pdf>

July 2007: Germany -- Federal Government (Bundesregierung) recommends,

“Prefer conventional wired connections, if the use of wireless-supported solutions can be avoided.”

[http://www.icems.eu/docs/deutscher\\_bundestag.pdf](http://www.icems.eu/docs/deutscher_bundestag.pdf)

September 2007: Canada -- Green Party

Demands federal action on cell phones and wireless networks

<http://greenparty.ca/releases/27.09.2007>

April 2008: Russian National Committee on Non-Ionizing Radiation Protection:

Publishes international appeal: “Children and Mobile Phones: The Health of the Following Generations is in Danger”

<http://www.kinder-und-mobilfunk.de/downloads/appellrcnirpengl.pdf>

April 2008: France:

Libraries disconnect Wi-Fi, including the National Library and Sorbonne Library.

[www.next-up.org/pdf/FranceNationalLibraryGivesUpWiFi07042008.pdf](http://www.next-up.org/pdf/FranceNationalLibraryGivesUpWiFi07042008.pdf)

September 2008, European Parliament:

(Members of the European Parliament) are greatly concerned at the Bio-Initiative international report on electromagnetic fields, which highlights the health risks posed by emissions from mobile-telephony devices such as mobile telephones, UMTS, Wifi, Wimax and Bluetooth, and also DECT landline telephones. It notes that the

limits on exposure to electromagnetic fields which have been set for the general public are obsolete.

<http://www.europarl.europa.eu/sides/getDoc.do?language=en&type=IMPRES S&reference=20080903IPR36136>

May 2011: Council of Europe, Committee on the Environment, Agriculture and Local and Regional Affairs recommends—

“Concerning the protection of children: ban on all mobile phones, DECT phones or WiFi or WLAN systems from classrooms and schools”.

<http://assembly.coe.int/main.asp?Link=/documents/workingdocs/doc11/edoc12608.htm>

January 2012: American Academy of Environmental Medicine, Resolution to California Public Utilities Commission:

“Chronic exposure to wireless radiofrequency radiation is a preventable environmental hazard that is sufficiently well-documented to warrant immediate preventative public health action...”

<http://aaemonline.org/images/CaliforniaPublicUtilitiesCommission.pdf>

January 2012: Austrian Medical Association press release and letter

The planned area-wide introduction of so-called ‘smart meters’, can lead to health consequences, in the opinion of the Department of Environmental Medicine of the Austrian Medical Association (ÖÄK)... The available transmission options such as radio or transmission over the power grid itself (Powerline Communication, short PLC) lead to electrosmog that is harmful to health.

Press Release, February 4, 2012

The expected health consequences would be an increase in symptoms and diseases that fall into the category of so-called multi-system diseases. This illness is characterized by involving several organs or functional systems at the same time and in interaction...

Who is liable in the event of health problems and diseases caused by the increased field exposure on the part of the Smart Meter?...

Letter to Austrian Federal Ministry for Economics, Family and Youth, 1-18-2012

Translated from German <http://www.aerztekammer.at>

March 2012: Swiss MP and physician Dr. Yolanda Gilli --

How high do you estimate the economic costs, for example as a result of the increase of multi-system diseases in area-wide introductions of smart grids, which operate with GSM, WLAN, or PLC?

Radiation risks and Smart Grid, Parliamentary filing (14 co-signers)

[http://www.parlament.ch/d/suche/seiten/geschaefte.aspx?gesch\\_id=20123169](http://www.parlament.ch/d/suche/seiten/geschaefte.aspx?gesch_id=20123169)

April 2012: Spain –

Ministry of Education defunds national digital classroom program because. "...to fill the classrooms with computers has not demonstrated to be academically profitable," saying there are studies that confirm better results among the students that don't work with computers in class.

[http://www.cadenaser.com/sociedad/articulo/educacion-suprime-plan-ordenadores-escuelas-infantiles/csrcsrpor/20120404csrcrsoc\\_3/Tes](http://www.cadenaser.com/sociedad/articulo/educacion-suprime-plan-ordenadores-escuelas-infantiles/csrcsrpor/20120404csrcrsoc_3/Tes)

July 2012: Israel -- Acting Health Minister writes to Education Minister,

"The process of deployment of wireless internet has to be paused and should (be) reconsidered comprehensively. I do fear that there will come a day that we will all shed tears regarding the irreversible damage that we, in our own hands, cause the future generation."

<http://www.timesofisrael.com/stop-wi-fi-in-schools-deputy-health-minister-implores/>

August 2012: Russia -- National Committee on Non-Ionizing Radiation Protection

"recommend(s) the usage of wired networks in schools and educational institutions, rather than a network using wireless broadband systems, including Wi-Fi...The Russians stand by their solid research which has consistently shown that prolonged exposure to RF/EMF radiation disturbs cognitive function."

<http://iemfa.org/images/pdf/Professor%20Yury%20Grigoriev.pdf>

November 2012: India –

The division bench of Chief Justice Arun Mishra and Justice N K Jain Senior held that radiations emitted from mobile phones and mobile base towers are "hazardous to children and patients", as accepted by the inter-ministerial committee of Central Government, and needs relocation from school, colleges, hospitals and play grounds immediately.

<http://www.deccanherald.com//content/294813/no-mobile-towers-near-schools.html>

## Conclusion

The above are examples of statements and actions. They are by no means an exhaustive list.

Project Censored has now included the health impacts of wireless technology as one of the top 25 unreported or underreported stories in its 2014 Yearbook. They titled it, "Wireless Technology A Looming Health Crisis".

<http://www.projectcensored.org/14-wireless-technology-looming-health-crisis/>

Cancer is now the leading cause of death in children, exceeding deaths by accidents.

1 in 5 children now have mental disorders according to the CDC.

<http://atlanta.cbslocal.com/2013/05/18/cdc-1-in-5-us-children-may-have-mental-disorder/>

Neurological deaths doubled in the United States between 1979 and 2010, and neurological illnesses are occurring at younger and younger ages.

Bournemouth University (2013, May 10). Brain diseases affecting more people and starting earlier than ever before. ScienceDaily. Retrieved May 16, 2013, from <http://www.sciencedaily.com/releases/2013/05/130510075502.htm>

There is overwhelming evidence of health and environmental impacts from radiofrequency electromagnetic radiation (RF). There is international clamor from experts and countries warning the public and taking action.

The question is whether this agency will continue to ignore the health and safety of all Americans and our surrounding ecosystem, and the enormous damage occurring right now, or whether it will do the right thing.

Take action now on this long overdue matter before the health and environmental crisis gets far worse, and it becomes too late.

Sincerely,

Nina Beety  
Monterey, CA 93940

Additional references:

<http://wifiinschools.org.uk/resources/safeschools2012.pdf>

UK: Report -- Safe Schools 2012 -- on wireless tech

Video: <http://www.youtube.com/watch?v=FO0AnNH8vI>

Wi-Fi in Schools: Testing for Microwave Radiation Dangers in the Classroom

<http://electromagnetichealth.org/electromagnetic-health-blog/cordless-heart/>

Radiation from Cordless Phones Causes Heart Irregularities, According to New Research Published Today in the European Journal of Oncology

[www.startribune.com/opinion/commentary/22122349.html](http://www.startribune.com/opinion/commentary/22122349.html)

Watch where you're beaming that signal, June 2008 – interference with medical devices

<http://emfsafetynetwork.org/?p=4560>

Dr. Olhoeft interview:

In part two Dr. Olhoeft describes a situation where as he passed through a retail store security system his stimulator was turned off. He shares, "I had to turn myself back on. I have about four seconds to do that before I start shaking so bad I can't do it."

[http://www.radiationresearch.org/pdfs/goldsworthy\\_bio\\_weak\\_em\\_07.pdf](http://www.radiationresearch.org/pdfs/goldsworthy_bio_weak_em_07.pdf)

The Biological Effects of Weak Electromagnetic Fields, Andrew Goldsworthy

<http://www.ijoeoh.com/index.php/ijoeoh/article/view/1309>

International Journal of Occupational and Environmental Health, Vol. 16, No 3  
(2010)

Epidemiological Evidence for a Health Risk from Mobile Phone Base Stations,  
Khurana et al.