

## Before the Federal Communications Commission

Washington, D.C. 20554

In the matter of

Updating the Commission's Rule for Over-the-Air Reception Devices WT Docket No. 19-71

Comment filed by Mary Beth Brangan on behalf of the Ecological Options Network, EON

EON strongly opposes the proposed amendments to the OTARD rule. It should not be changed to allow wireless companies to put their 5G antennas on private homes in an attempt to avoid legal oversight. Threats to security, safety and privacy already abound from exponentially increasing use of wireless technologies. What legal remedy would be available to a neighbor adversely affected by a 5G antenna on a nearby property? What legal protections would a property owner have against property devaluation? What responsibility does the FCC have to inform a prospective property owner considering placing a 5G antenna on their property about potential liability for harming neighbors? What responsibility does a property owner have to inform neighbors about the presence of a 5G antenna on their property?

The FCC should not be using taxpayer dollars for the benefit of wireless companies, pushing a new technology that has never been proven safe, and in fact, wireless transmission of 2G, 3G and 4G have been shown in peer-reviewed studies to be unsafe. Already there are growing numbers of severely RF injured people who have no where to go to avoid these ubiquitous and increasing frequencies and whose lives are hell from painful reactions they can't escape. The ADA law should protect them but is infrequently honored.

We know the "5G" installations will be using the prior generations of frequencies as well as millimeter wave technology. We also know that millimeter wave technology has been used as a 'pain ray' for crowd control by the military – not a reassuring fact.

The FCC's wireless radiation exposure guidelines are based on research from the 1980's, which was biased even then against admitting scientifically established harm and mandated only considering thermal effects, not the non-thermal biological effects documented in copious recent studies. And certainly, though there is inadequate study of the health effects from uses of millimeter wave tech, there is high concern from those [scientists who have done preliminary studies](#) that show the helical shape of the sweat ducts provide a perfect antenna for penetration of the MW. There is concern that MW will penetrate into the body much farther than expected.

At this time people are already experiencing adverse reproductive, health and mental effects from the additive effects of increasing exposure to RF/EMF from existing wireless devices and transmissions. Studies show 54% of young people born after 1989 suffer from chronic illness, defined as an illness with no cure within western medicine.

Allowing even more close proximity radiation from what the World Health Organization's International Agency for Research on Cancer currently classifies as a Class 2B carcinogen, will result in massive public opposition and major legal challenges. It is totally irresponsible to ignore the FCC's own initiated but not concluded open dockets on reassessing the current exposure guidelines, particularly for children, the ill and elderly.

Many elected public officials across the country are responding to constituents' concerns and demanding proof of safety before allowing more of this complex, powerful radiation to pervade the environment and public areas. Attempts by the FCC to continue your overreach will result in rising enmity among the public against all wireless companies. Why destroy your customer base?

The FCC proceeding mentions the "potential to bring enormous benefits" but there is no FCC analysis of the costs or cost effectiveness. And to truly determine the costs, the FCC will have to factor in major debilitation of the entire population of all living creatures (people, birds, insects, microbes, animals, plants) by intense, man-made radiation that our electrical-biological systems did not evolve within. The profit from wireless technologies is clearly not worth damaging the integrity of biological systems, which are all electrically based on unique frequencies.

The National Toxicology Program under the National Institutes of Health has completed the largest-ever animal study on cell phone radiation and cancer. The relationship between radiofrequency radiation and cancer is clearly established. Dr. John Bucher, Associate Director of the NTP and the lead researcher on this study confirms that the exposure of 1.5 W/Kg is lower than currently allowed for the public, including children, under FCC public safety limits. Testing on rats is standard in predicting human cancers.

The [NTP results confirm](#) that cell phone radiation exposure levels within the currently allowed safety limits are the "likely cause" of brain and heart cancers in these animals. Italy's [Ramazzini Institute's study of rats](#) showed an increase in the incidence of very rare highly malignant tumors—schwannomas of the heart—observed in male rats and reached statistical significance at the highest dose. These are the same types of rare and malignant tumors found to be increased in the US National Toxicology Program (NTP) \$25 million animal study of cell phone radiation that used far higher RFR exposure levels. The tumors are also the same histotype as found to be increased in long term cell phone users.

Dr. Anthony Miller, Professor Emeritus with the University of Toronto, and adviser to the International Agency for Research on Cancer says, "Many scientists worldwide now believe that radiofrequency radiation should be elevated to a Class One human carcinogen, on the same list as Cigarettes, X-Rays, and Asbestos."

Cancer is not the only health effect. Adverse health effects are seen particularly in children whose rates of autism, ADD, depression, anxiety, childhood obesity and asthma are skyrocketing. Kaiser Permanente studies showed clear relationship between in utero exposure to non-ionizing radiation and both 3 times greater risk of miscarriage as well as increased risk of childhood obesity and asthma.

There is also a growing body of science showing the interaction between chemical pollution, excess heavy metals in the body and RF/EMF synergize to produce effects greater than each would have individually. See Dr. Ron Kostoff's

EFFECTS OF TOXIC STIMULI COMBINATIONS ON DETERMINATION OF EXPOSURE LIMITS  
[https://smartechnology.gatech.edu/bitstream/handle/1853/59719/EXPOSURE\\_LIMITS\\_SAFETY\\_FINAL\(1\).pdf](https://smartechnology.gatech.edu/bitstream/handle/1853/59719/EXPOSURE_LIMITS_SAFETY_FINAL(1).pdf)

Scientific sources include the most recent [BioInitiative Report](#), the [International EMF Scientist Appeal](#), the [Europa EMF Guideline from 2016](#), the [5G Appeal](#), [recommendations from the American Academy of Pediatrics](#), [the International Association of Firefighters](#) in 2004, the [California Medical Association resolution on December 7, 2014](#), [Kaiser Permanente studies re higher miscarriage rates, asthma](#) and [childhood obesity](#) and many, many others.

References:

**Letter to the FCC from Dr. Yael Stein MD in Opposition to 5G Spectrum Frontiers**

<https://ehtrust.org/letter-fcc-dr-yael-stein-md-opposition-5g-spectrum-frontiers/>

**“Clear Evidence of Cancer” Concludes U.S. National Toxicology Program Expert Panel on Cell Phone Radiation**

<https://ehtrust.org/clear-evidence-of-cancer-concludes-the-expert-panel-to-the-us-national-toxicology-program-on-cell-phone-radiation-study-findings/>

**Ramazzini Institute Study: Animal Study on Base Station/Cell Tower Radiofrequency Radiation**

<https://ehtrust.org/ramazzini-institute-study-animal-study-on-base-station-cell-tower-radiofrequency-radiation-question-answer/>

<https://bioinitiative.org/>

<https://emfscientist.org/index.php/emf-scientist-appeal>

<https://www.ncbi.nlm.nih.gov/pubmed/27454111> ; <https://europaem.eu/en/library/blog-en/97-europaem-emf-guideline-2016>

<https://www.5gappeal.eu/scientists-and-doctors-warn-of-potential-serious-health-effects-of-5g/>

<https://ehtrust.org/wp-content/uploads/AAP-Recommendations-Fact-Sheet-3.pdf>

<https://www.sciencedirect.com/science/article/pii/S0013935118300161?via%3Dihub>

**The human skin as a sub-THz receiver - Does 5G pose a danger to it or not?**

<https://www.ncbi.nlm.nih.gov/pubmed/29459303>

**The Modeling of the Absorbance of Sub-THz Radiation by Human Skin**

<https://ieeexplore.ieee.org/document/8016593>

**The California Medical Association Wireless Resolution**

<https://ehtrust.org/the-california-medical-association-wireless-resolution/>

**New Kaiser Permanente Study Provides Evidence of Health Risks ...**

<https://about.kaiserpermanente.org/our-story/health-research/news/new-kaiser-permanente-study-provides-evidence-of-health-risks-li>

**In-Utero Exposure to Magnetic Fields Associated with Increased Risk of Obesity in Childhood**

Here are a few studies focused on neurological effects:

Kim, Ju Hwan, et al. [“Long-term exposure to 835 MHz RF-EMF induces hyperactivity, autophagy and demyelination in the cortical neurons of mice.”](#) Scientific Reports, vol. 7, no. 41129, 2017.

Study found that RF-EMF exposure led to myelin sheath damage and hyperactivity-like behaviour in mice exposed to 835 MHz RF-EMF at a specific absorption rate (SAR) of 4.0 W/kg for 5 hours/day during 12 weeks. Demyelination was induced in cortical neurons following prolonged RF-EMF exposure and suggests a potential cause of neurological or neurobehavioural disorders.

Full Text <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5247706/pdf/srep41129.pdf>

Redmayne M, Johansson O. [Could myelin damage from radiofrequency electromagnetic field exposure help explain the functional impairment electrohypersensitivity? A review of the evidence.](#) Journal of Toxicology and Environmental Health, vol. 17, no. 5, 2014, pp. 247-58.

Review of the evidence for an association between myelin integrity and exposure to low-intensity radiofrequency electromagnetic fields (RF-EMFs)

*“Overall, evidence from in vivo and in vitro and epidemiological studies suggests an association between RF-EMF exposure and either myelin deterioration or a direct impact on neuronal conduction, which may account for many electrohypersensitivity symptoms. The most vulnerable are likely to be those in utero through to at least mid-teen years, as well as ill and elderly individuals.”*

Full Text [http://www.avaate.org/IMG/pdf/redmayne\\_johansson\\_2014.pdf](http://www.avaate.org/IMG/pdf/redmayne_johansson_2014.pdf)

**Sage, C. and Burgio, E. (2017), Electromagnetic Fields, Pulsed Radiofrequency Radiation, and Epigenetics: How Wireless Technologies May Affect Childhood Development. Child Dev. doi:10.1111/cdev.12824**

*“New epigenetic studies are profiled in this review to account for some neurodevelopmental and neurobehavioral changes due to exposure to wireless technologies. Symptoms of retarded memory, learning, cognition, attention, and behavioral problems have been reported in numerous studies and are similarly manifested in autism and attention deficit hyperactivity disorders, as a result of EMF and RFR exposures where both epigenetic drivers and genetic (DNA) damage are likely contributors. Technology benefits can be realized by adopting wired devices for education to avoid health risk and promote academic achievement.”*

**Full**

**Text** [https://eliant.eu/fileadmin/user\\_upload/de/pdf/Sage\\_Burgio\\_Childhood\\_2017\\_Epigenetics.pdf](https://eliant.eu/fileadmin/user_upload/de/pdf/Sage_Burgio_Childhood_2017_Epigenetics.pdf)