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To: U.S. Department of Health and Human Services, Office of the Assistant Secretary for Health and Human Services.

From: Dr. Cindy Russell,
Executive Director, Physicians for Safe Technology and without the use of AI

Re: Docket No. HHS-OASH-2026-0397 | FR Doc. 2026-19252 Published September 21, 2026.
Comments due October 21, 2026.

Date: 10/21/26

Dear Health and Human Services:

Physicians for Safe Technology is a group of physicians, scientists and advocates who promote the safer use of technology in homes, schools, workplaces, healthcare settings and communities. While we recognize the convenience and usefulness of wireless technology, the direct and indirect harms have not been acknowledged or addressed by government agencies, despite emerging robust science indicating a need for reevaluation of RF/EMF safety standards based on biological interference, not just heat, in order to sustain human and planetary health.

Our group, Physicians for Safe Technology, and others, have looked extensively at the science of wireless technology, including the new 5G millimeter wave technology.

We believe that the scientific evidence clearly demonstrates the long-term risks for cancers, neurological harm, reproductive harm, developmental harm and biochemical harm for both children and adults from overexposure to wireless radiofrequency radiation (RFR).

The rapid expansion of wireless technologies on land is alarming. The expansion into space for energy, internet, cell phone connection, and commercialization is particularly problematic due to recent evidence that atmospheric pollution, including black carbon, from telecom satellite rockets causes loss of the ozone layer and climate impacts. (Drikakis 2022; Ryan 2022; Maloney 2022)

This increasing RF/EMF from cell towers in space needs to be considered as well. In Levitt (2021), describing wildlife effects of RF/EMF, the authors note, “New complex multifrequency satellite networks are increasing and therefore Earth exposures are too. Large or small, most satellites communicate with earth-based stations at significant power outputs...None of these agencies or companies appear concerned about the massive infusion of novel RFR into various strata of the atmospheric or ground-based environment, and the U.S. Environmental Protection Agency—the agency with primacy over environmental radiation effects— has been defunded for nonionizing radiation research and regulatory oversight since 1996.”

We are thus submitting testimony with regards to your request to submit evidence and information on the potential health effects of electromagnetic fields (EMFs), radiofrequency (RF) radiation, and wireless radiation exposure. We appreciate that you will *“evaluate the state of the science, compare U.S. and international safety standards and regulatory approaches, identify critical research gaps, and develop practical, evidence-based recommendations for policymakers, families, schools, communities, and public health professionals.”*

An Abundance of Science on Harm

In the last 10 years as wireless technology use has mushroomed, physicians and scientists have examined the growing body of basic scientific research, epidemiologic studies and case control studies showing adverse effects of wireless technology on our cellular biological processes. The mechanism is similar to other toxic exposures with oxidation being a common point of injury to fragile cell membrane transport systems, proteins, DNA, sperm, stem cells, ovarian follicles, embryos ([Seify 2024](#)) and mitochondria (our cellular energy power plants). **Radiofrequency radiation (RFR) is an environmental toxicant which like many other toxins is inadequately studied, monitored or regulated.** Because one cannot feel it, see it or hear it, RFR is among the many other toxic exposures silently and slowly affecting our basic biology, genetic structures and that of our environment. This causes a silent decline in our health and that of the environment. FCC limits are based on heat not biological harm, thus inadequate to protect the public. (BioInitiative 2026) Precaution in use is critical.

Electromagnetic Radiation Syndrome (EMR Syndrome)

The development or exacerbation of a condition known as electromagnetic radiation syndrome or electromagnetic hypersensitivity is a particular concern with increasing levels of exposure to wireless radiation from 24/7 emitting cell towers, as well as wireless devices and the Internet of Things affecting people at home, in schools and the surrounding community, in addition to wildlife that are not subject to the placebo effect. (Balmori 2022) Most of these exposures are thus involuntary and without informed consent. Wireless radiation can cause disabling symptoms in children or adults that are a mystery to physicians not familiar with this condition.

Electromagnetic radiation syndrome (electrohypersensitivity or microwave illness) is a clinical and pathological environmental illness in some people that is associated with exposure to manmade electromagnetic fields (EMF) from cell phones, cell towers, Wi Fi routers, smart meters, White Boards, Bluetooth, wireless devices and electronic devices, causing non-specific but reproducible symptoms, which resolve with removal of the inciting frequencies (Belyaev 2016).

It is an increasingly reported health condition but poorly understood by physicians due to lack of education and expertise in toxicants or radiofrequency exposures. Symptoms of electrosensitivity, which may be mild, moderate or severe, include *headaches, fatigue, cognitive changes with attention and memory deficits, dizziness, nausea, insomnia, heart palpitations, agitation, generalized pain, skin rashes, nosebleeds, depression, anxiety or generally feeling “unwell”*. (Bevington 21019) These symptoms can occur after a toxic exposure that could harm mitochondria or other cellular systems and thus make that individual more susceptible.

The biological mechanism of action of harm from wireless electromagnetic radiation has been identified as oxidative stress, which is a common mechanism of physiologic injury from chemical toxin exposures. (Carpenter 2015; Schuermann 2021) There is an association of electromagnetic sensitivity with chemical sensitivity (Belpomme 2022, 2015)

Dr. Scott Eberle, a hospice physician developed electrosensitivity after carbon monoxide poisoning. He wrote two articles describing his frustration as well as difficulty explaining this condition to his colleagues who ultimately helped him perform a blinded experiment to confirm that the wireless radiation caused his symptoms. Dr. Eberle wrote a published article, *An underworld journey: Learning to cope with electromagnetic hypersensitivity*, in 2017 to educate others. Dr. William Rea in 2009 explained that in order to positively identify patient with EMR Syndrome you need to have environmentally controlled conditions.

Hardell and Carlberg (2022) published a new case report, **The Microwave Syndrome after Installation of 5G Emphasizes the Need for Protection from Radiofrequency Radiation**, discussing two previously healthy persons who developed symptoms of EHS after installation of a 5G base station on the roof above their apartment. Their symptoms rapidly emerged after the 5G deployment and included neurological symptoms, tinnitus, fatigue, insomnia, emotional distress, skin disorders, and blood pressure variability. Measurements of the RF levels were made and when they vacated their apartment to another location with lower EMF their symptoms abated.

The authors conclude, *“The RF radiation levels in the apartment were well below the limit proposed to be “safe” below which no health effects would occur, recommended by the International Commission on Non-Ionizing Radiation (ICNIRP). These now presented symptoms of the microwave syndrome were caused by non-thermal effects from RF radiation and highlight that the ICNIRP guidelines used in most countries including Sweden do not protect human health. Guidelines based on all biological negative effects from RF radiation are urgently needed, as well as monitoring human health, not the least due to rapidly increasing levels of exposure.*

Note: The ICNIRP guidelines are similar to the exposure limits adopted by the Federal Communications Commission (FCC) in the U.S.

As physicians and scientists, we have heard from those with Electromagnetic Radiation Syndrome (EMR Syndrome), also known as electrosensitivity or microwave illness in the literature, whose lives have been not only harmed, but upended by ambient radiofrequency radiation in their homes, schools and communities. Exposure to RF/EMF emissions through Wi Fi, cell towers or other wireless devices affects some people to varying degrees that could be mild, moderate or severe enough to be disabling, preventing them from living in the modern world. They can travel, work or go to school without accommodation.

The stories have a common scenario. People develop fatigue, headaches, insomnia, heart palpitations, feeling unwell in the presence of wireless devices such as cell phones or Wi Fi routers and sometimes even electrical appliances. These symptoms disappear when they are removed from the source of radiation. The effects appear to be cumulative with continued exposure.

I will quote from emails we have received from persons experiencing symptoms of Electromagnetic Radiation Syndrome and others who have spoken out. Spelling has not been corrected. The names will remain anonymous.

Woman who lives in a basement in Quebec, “That's my life now. No more restaurants, no more hotels, no more stays at friends and family houses if it is in 5G and wifi from neighbors. No new car because of wifi. No more ski where there are cell towers. No more long bicycle runs etc.”

13 year old English teenager (from PHIRE)

“EHS has dramatically affected my life, but maybe not in the ways you might think. Of course there are places I can't go, or things I don't have, but I live a very “normal” life in most ways. I can message my friends through email or Skype on a hardwired system as long as I don't spend too long and I can go to school now that I have one without Wi-fi and mobile phones. [...] I can feel things and sense things most people can't. This has protected my health, and I like to think of it as a superpower. Of course sometimes, when I can't sleep, or can't go to school, it doesn't feel like that, but in my stronger states, I recognise that it is kind of amazing.”

Woman who is an independent researcher in life sciences and has EMR Syndrome. “All the medical doctors and therapists that I have heard or met in conferences or in associations confirm the reversibility of the symptoms as well as the reversibility of the biomarkers, when the source of the EMFs emission is removed or the person withdraws, which excludes de facto the fact that we are dealing with a pathology.”

Noah Davidson spoke out about these debilitating electrosensitivity symptoms that developed in both of his kids after the 5G tower was placed directly in front of their home in Sacramento, California. He hired a

building biologist to help shield his house and move the children farther away to mitigate the problem. An [article](#) about this was published in Public News Service Oct 9, 2020.

Amelia in Pittsfield, Massachusetts tells her story about developing electrosensitivity when a cell tower was erected in her neighborhood in the historic Berkshire Hills. This area of Western Massachusetts was originally Mohican Territory and eventually came to be where [Herman Melville](#) built his homestead and wrote arguably the best seafaring book, Moby Dick. Melville wrote in his 1855 novel Israel Potter, “The bloom of these mountains is beyond expression delightful,”. Now, along with the views of Mount Greylock, one sees the looming cell tower and neighbors fleeing their homes to protect their health. 5G Earth Day Countdown: Children- Amelia’s Terrible, Horrible, No Good, Very Bad Cell Tower Days. April 21, 2021. Natural Blaze. <https://www.naturalblaze.com/2021/04/5g-earth-day-countdown-children-amelias-terrible-horrible-no-good-very-bad-cell-tower-days.html>

Solveig, Teenager Who Developed Electrosensitivity in School

In 2021 a young teen, Solveig, described her [compelling story](#) of how she developed electrosensitivity, first from a Wi Fi router at school she sat near, to Theodora Scarato, Executive Director of Environmental Health Trust. Her symptoms included rashes on her face, brain fog, fatigue and nausea. Solveig discusses the difficulty in first identifying the symptoms which occurred only at school initially, how her parents helped by eliminating wireless devices in the home and how the school eventually gave her accommodation. As cell towers began to proliferate her ability to move in her community became more limited.

Multiple electrosensitive residents [testify in opposition to AB 57](#) in California which was signed by Governor Brown in 2015 and in essence fast tracks cell tower placement. AB 57 allows “collocation or siting application for a wireless telecommunications facility is deemed approved if the city or county fails to approve or disapprove the application within the reasonable time periods specified...” This bill puts a burden on cities and counties who prior to AB 57 would have a longer, more thorough process for cell tower application approval including more public input. This bill passed in California. Ironically AB57 has an exemption for firefighters to have cell towers on or adjacent to their facilities. AB 57 states,”Section 65964.1. (f) Due to the unique duties and infrastructure requirements for the swift and effective deployment of firefighters, this section does not apply to a collocation or siting application for a wireless telecommunications facility where the project is proposed for placement on fire department facilities. “ [CA AB57 \(2015\) Legiscan Text of Bill](#).

Children Are More Vulnerable

Children are more vulnerable to wireless radiation’s adverse neurological effects due to their thinner skulls and developmentally immature brains. (Morgan 2014; Fernandez 2018; Gandhi 2012). Pregnant women are also at risk due to the vulnerability of the developing fetus (Li 2017) with associations found in animal and epidemiologic studies between prenatal exposures and ADHD and behavior. Humans are now exposed from pregnancy to childhood and through adulthood, a full lifetime of exposure.

Nervous System Effects

The brain and nervous system are considered to be a primary target of wireless non-ionizing radiation, as they function by using minute electrical signals. Effects of wireless radiation on the nervous system demonstrated in studies include DNA damage, alteration of neural functioning (cognition and learning), decrease in neurotransmitters (mood altering), oxidative nerve cell injury and inflammation, damage to hippocampus (memory center) and demyelination (disruption of the protective cells surrounding nerves). Studies of Wi Fi routers, cell phones, as well as cell towers show adverse neurologic effects including memory, behavior and cognition. Considering schools primary objective is learning it seems wise to take a precautionary attitude with regards to cell towers, as well as other wireless devices.

Cell Tower Neurologic and Cognition Effects

Dozens of studies show neurologic and other health effects in residents who live in proximity to cell towers. The severity of health effects is dependent on the distance from the towers. The most common symptoms are fatigue followed by insomnia, headache, poor concentration, memory loss, irritability, heart palpitations and skin effects. **Santini (2002)** noted the above symptoms when cell towers were within 200-300 meters to homes. A follow up study Santini in 2003 revealed that older subjects reported more symptoms and were more sensitive. The authors noted that the duration of exposure of 1 to 5 years did not have an effect on frequency of symptoms but after 5 years there was a significant increase in irritability reported.

Symptoms Resolve When Cell Tower Removed

In an independent cell tower study from Japan, **Shinjyo and Shinjyo (2011)**, looked at the health effects of residents living in a condominium complex from 1998-2009, both before and after cell towers were placed. The authors surveyed the residents' health symptoms before placement of cell towers, during cell tower functioning and after removal of different antennas on the rooftops. They found a significant development of neurologic symptoms with placement of the cell towers and a **significant reduction in symptoms after removal**.

High School Students with Cognitive Decline Near Cell Tower

Meo (2018) studied the effects of cell towers near 2 high schools and found cognitive changes after 2 years in the teenagers near the higher emitting cell antenna. This 2-year case-controlled study examined the neurologic effects of children, aged 13-16, in schools with nearby cell towers. The study revealed significant decline in cognitive scores when the RF radiation from the cell tower was higher but still at non-thermal levels. **All RFR levels were below current ICNIRP exposure guidelines**. Cognitive function tasks were measured by the Cambridge Neuropsychological Test Automated Battery (CANTAB). Participants were excluded who had any confounding factors. **Students in the school with higher exposure to RF-EMF produced by cell towers was associated with delayed fine and gross motor skills, spatial working memory, and attention compared to students in the school who were exposed to lower RF-EMF.**

Review of Health Effects of Cell Towers

Balmori published a 2022 article, *Evidence for a health risk by RF on humans living around mobile phone base stations: from radiofrequency sickness to cancer*, reviewing the previous studies highlighting both short-term and long-term health effects of those living near cell towers.

Balmori concluded, **“Overall results of this review show three types of effects by base station antennas on the health of people”: radiofrequency sickness [electromagnetic hypersensitivity], cancer and changes in biochemical parameters.** “Considering all the studies reviewed globally (n = 38), 73.6% (28/38) showed effects: 73.9% (17/23) for radiofrequency sickness, 76.9% (10/13) for cancer and 75.0% (6/8) for changes in biochemical parameters...Of special importance are the studies performed on animals or trees near base station antennas that cannot be aware of their proximity and to which psychosomatic effects can never be attributed.” These symptoms occur within the “safety” levels of the Federal Communications Commission which allow emissions that are 100 times higher than many other countries such as Italy

8 Case Reports on 5G Cell Tower Health Effects (2023-2024)

Hardell and Nilsson published [8 case reports](#) and a [summary](#) of acute health symptoms when 5G cell towers were installed in neighborhoods in Sweden. These were seen in women, men, elderly and in children. Careful surveys of symptoms and measurements of the radiofrequency radiation were performed. All were within the current guidelines yet symptoms were reported. They noted the symptoms reported by residents in the [summary article](#) with the , “Most prevalent and severe were sleeping difficultly (insomnia, waking night time, early wake-up), headache, fatigue, irritability, concentration problems, loss of immediate memory, emotional distress, depression tendency, anxiety/panic, dysesthesia (unusual touched based sensations), burning and lancinating skin, cardiovascular symptoms (transitory high or irregular pulse), dyspnea, and pain in muscles and joints...All these symptoms are included in the microwave syndrome. In most cases the symptoms declined

and disappeared within a short time period after the studied persons had moved to a place with no 5G. These case histories are classical examples of provocation studies. They reinforce the urgency to [inhibit the deployment of 5G until more safety studies have been performed.](#)”

The authors conclude, “These now presented symptoms of the microwave syndrome were caused by non-thermal effects from RF radiation and highlight that the ICNIRP guidelines used in most countries including Sweden do not protect human health. Guidelines based on all biological negative effects from RF radiation are urgently needed, as well as monitoring human health, not the least due to rapidly increasing levels of exposure.”

Science Points to No Cell Towers on or Near Schools or Hospitals

The scientific evidence indicates cell towers of any generation should not be placed near schools, hospitals or homes. A minimum separation distance of at least 1640 feet should be given to avoid the worst symptoms from any cell tower (Pearce 2019).

In March 2023 the Santa Clara County Medical Association passed the [SCCMA Best Practices for Safe Technology in Schools Recommendations](#). This document provides ample scientific evidence that wireless radiation from cell towers and other wireless devices acts as an environmental toxicant and may be harmful, especially for children, with long term exposure. A precautionary approach is warranted. Policy recommendation #15 is “Consider a policy to restrict installation of cell towers on school property. The recommendation to have at least 1640 feet (500meters) distance from a cell tower to a school well supported. (Balmori 2022; Pearce 2020)”

In 2023 the Maryland Children's Environmental Health and Protection Advisory Council developed [guidelines to reduce electromagnetic field radiation](#) as well. (reference below)

In 2011 the European Council passed Resolution 1815 on “[The potential dangers of electromagnetic fields and their effect on the environment.](#)” They recommend concerning the protection of children: 8.3.1. develop within different ministries (education, environment and health) targeted information campaigns aimed at teachers, parents and children to alert them to the specific risks of early, ill-considered and prolonged use of mobiles and other devices emitting microwaves; 8.3.2. for children in general, and particularly in schools and classrooms, give preference to wired Internet connections, and strictly regulate the use of mobile phones by schoolchildren on school premises.

Cell Tower Hormonal Dysregulation Effects

Buchner and Eger (2004) found cell tower proximity caused dysregulation of hormonal systems and cell towers. Because of concerns with the “scientific uncertainty” of public health impacts of cell tower radiofrequency emissions, Professor Buchner and Eger performed a rather novel study over a year and a half in Bavaria in 2004. Hearing that a cell tower was to be placed in their municipality they enlisted volunteers to have their urine tested for levels of adrenaline, noradrenaline, dopamine and phenylethylamine, all stress hormones that cannot be consciously regulated. They found continued dysregulation of the catecholamine system with elevation in the stress hormones adrenaline, noradrenaline with decreases in dopamine and phenylethylamine after the tower was placed. Long term dysregulation of the catecholamine system is well known to damage human health. Another study by **Eksander (2012)** demonstrated decreases in ACTH, cortisol, thyroid hormones, prolactin and testosterone with exposure to higher but environmentally relevant levels of radiofrequency radiation over a 3-year period.

Cell Tower Cancer Effects

A 10-year study (1996-2006) by **Dode (2011)** examined the distance from cell towers and cancer clusters. He and his colleagues found a highly significant increase in cancers in those living within 500 meters of the cell tower. They noted “The largest density power was 40.78 $\mu\text{W}/\text{cm}^2$, and the smallest was 0.04 $\mu\text{W}/\text{cm}^2$.” **The current guidelines are about 1000 $\mu\text{W}/\text{cm}^2$, thus even at lower power long term effects are evident.** The

authors conclude “Measured values stay below Brazilian Federal Law limits that are the same of ICNIRP. The human exposure pattern guidelines are inadequate. **More restrictive limits must be adopted urgently.**”

A study by **Wolf and Wolf (2004)** showed a significant increase in cancer in those living within 350 feet of a cell tower. **Eger (2004)** found an increase in new cancer cases within a 10-year period if residents lived within 400 meters of a cell tower. They also found that within 5 years of operation of the transmitting base station the relative risk of cancer incidence tripled in residents near the cell tower compared to resident living outside the area.

500 Meter Buffer Recommended Around Schools and Hospitals to Limit Liability

Pearce (2019) looked at health effects of cell towers, publishing a peer reviewed industry paper, Limiting liability with positioning to minimize negative health effects of cellular phone towers, which recommends a 500 Meter buffer recommended around schools and hospitals to limit liability. Pearce noted that current U.S. Law is Unhelpful for Preventing Future Liability.

“Current U.S. law has created a somewhat peculiar overriding federal preemption that precludes taking the “environmental effects” of RFR into consideration in cell tower siting (see Section 704 of The Telecommunications Act of 1996). The current U.S. standards are based solely on thermal effects... because scientific knowledge is incomplete, a precautionary approach is better... To overcome these challenges in urban areas cellphone companies often locate cellphone base stations at schools, because the monthly rental fee (~\$1500) is welcome income for economically-challenged school districts that have influence on local zoning. However, some jurisdictions have already prohibited the placement of cell phone towers near schools or hospitals because of the increased sensitivity of these populations, as in India... voluntarily restrictions can be made on the placement of cellular phone base stations within 500 m of schools and hospitals.

Reproductive Organs: Infertility and Miscarriage

Damage to DNA either female or male or to the fetus in critical windows of development can not only cause infertility and miscarriage but also heritable birth defects. Recent research demonstrates that RFR is toxic to the fragile reproductive process with a distinct lack of studies showing that this technology is safe for the reproductive organs. RFR has been shown to cause injury to DNA, proteins, lipids and fragile metabolic processes. Peer reviewed research shows harm to sperm, ovaries(causing aging of ovaries) and embryos. Miscarriage is also a risk. Dr. De Kun Li performed a prospective study on pregnant women following them through their pregnancy and found that the highest levels of everyday EMF exposure were associated with a 3-fold increase in miscarriage. Cell towers may have high enough emission levels on a daily basis to contribute to miscarriage (Li 2019). Cell tower radiation could contribute to long term reproductive failure as was seen by Magras in rats exposed to cell tower radiation over 5 generations. The biological effects are silent until these students are older and ready to have a family. Only then is the harm realized.

New Hampshire 5G Commission Finds Radiofrequency Radiation Problematic

The first Commission formed in the United States to study the environmental and health effects of 5G technology released their comprehensive final report on November 1, 2020. The Commission to Study the Environmental and Health Effects of Evolving 5G Technology was mandated by HB 522 passed by the state legislature in New Hampshire. Their final report included 15 recommendations addressing the need for public education about wireless hazards, RF health studies, RF measurements, cell antenna setbacks, fiberoptic rather than wireless deployment, commercial warning signs and wildlife protection. After hearing extensive testimony in a series of 13 meetings over the course of a year and reviewing an abundance of research, the Commission highlighted the lack of a single definition for 5G, insufficient evidence of safety for 5th generation technology, a concern that safety standards for wireless technologies have not been updated with the latest science and that 5G is largely a marketing concept. They also expressed concern that the FCC has a long history of being accountable to industry over the desires of communities and individuals.

FCC Wireless Radiation Limits: A False Sense of Security

The studies above indicate that new standards are needed that protect humans and the environment. The FCC failed to reevaluate the standards and review new evidence and was sued.

FCC Lawsuit for Failure to Reevaluate Safety Standards for Wireless RFR

A lawsuit filed against the FCC due to their failure to reevaluate radiofrequency radiation safety standards with commercialization of the new high frequency RFR, including 5G frequencies, was won by Environmental Health Trust and Children's Health Defense on August 13, 2021. The Court wrote, "Under this highly deferential standard of review, we find the Commission's [FCC] order arbitrary and capricious in its failure to respond to record evidence that exposure to RF radiation at levels below the Commission's current limits may cause negative health effects unrelated to cancer... We find the Commission's order arbitrary and capricious in its complete failure to respond to comments concerning environmental harm caused by RF radiation."

U.S. Cell Tower Radiation Policy Fails Public Health

[Scarato \(2025\)](#) in a recent peer reviewed publication shed much needed light on the history and policies of the US in regards to cell towers and radiation limits. She notes the flaws in current safety standards based only on heat, not biological effects stating "While many countries have adopted the thermally based limits of ICNIRP, several nations have implemented more stringent thresholds based on their scientific research or precautionary frameworks that attempt to mitigate risk." Some countries, such as Italy and Russia, have [100 times lower](#) radiation emission caps.

Dr. Joel Moskowitz, a scientist who has researched and written on tobacco harm, as well as radiofrequency radiation, gives a similar and precautionary view in his 2019 article, [We Have No Reason to Believe That 5G is Safe](#), published by Scientific American. He cites the [International Scientist Appeal](#) calling for stronger wireless standards, "Numerous recent scientific publications have shown that EMF affects living organisms at levels well below most international and national guidelines. Effects include increased cancer risk, cellular stress, increase in harmful free radicals, genetic damages, structural and functional changes of the reproductive system, learning and memory deficits, neurological disorders, and negative impacts on general well-being in humans. Damage goes well beyond the human race, as there is growing evidence of harmful effects to both plant and animal life." He goes on to say, "5G also employs new technologies (e.g., active antennas capable of beam-forming; phased arrays; massive multiple inputs and outputs, known as massive MIMO) which pose unique challenges for measuring exposures."

Dr. Moskowitz highlights the **430 scientists and medical doctors** who signed the [5G Appeal](#) "that calls for an immediate moratorium on the deployment of 5G and demand that our government fund the research needed to adopt biologically based exposure limits that protect our health and safety."

The Insurance Industry Says Wireless Radiofrequency Radiation is a Health Risk While Telecom Industry Promotes Cell Towers and Wireless Technologies

Industry heavily promotes the rapid adoption of new wireless and digital technologies in schools as necessary to "keep up". They profit from the data collected as well as the selling of devices and new software. The powerful telecommunications associations and the FCC, considered a captured agency, will dismiss, discredit and deride current research and researchers who want more protective standards or who ask for precaution. (FCC Captured Agency [Alster 2016](#))

Insurance companies consider wireless radiation to be similar to asbestos in long term health impacts and [do not provide insurance coverage](#) from harm for RF health effects. Insurance companies have an exclusion for radiofrequency radiation as an emerging health risk. **Cities and schools are left with the liability unless they can provide special "pollution" insurance that does not exclude radiofrequency radiation.**

In a 2019 report, [New Emerging Risk Insights](#), by Swiss RE, the second largest reinsurance company in the world, **5G is listed as an emerging concern** in the high risk category within 3 years. Included in the high-risk trends are artificial intelligence and the existential threats of climate change. *“The top five emerging risks in our SONAR 2019 report are digital technology’s clash with legacy hardware, potential threats from the spread of 5G mobile networks, increasingly limited fiscal and monetary flexibility by central banks, genetic testing’s implications on life insurers, and the impact of climate change on the life and health sector.”*

Re-Inventing Wires: The Future of Landlines and Networks

Schoechle in 2018 published a thorough review of the history, safety and policy relating to wireless versus wired communications titled **Re-Inventing Wires: The Future of Landlines and Networks**. It is a valuable publication to review in reconsidering the benefits of wired connections, especially in the age of cell phone bans in schools. Dr. Schoechle notes, “The history of U.S. communication infrastructure increasingly supports the proposition that it is unrealistic to expect private monopolies, duopolies, or triopolies—regulated or unregulated—to make the long-term investments necessary to build the enduring and sustainable public broadband fiber information highway that the country needs. Corporations will invariably seek the cheapest, quickest, and most profitable path, which has led to the current emphasis on wireless.”

The Telecommunications Act of 1996

The 1996 Telecommunications Act (TCA) gave “express and expansive” regulatory authority to the FCC, and in turn telecommunications companies, to expand telecommunications stating that state or local regulations governing the “placement, construction, and modification of personal wireless services facilities” **cannot consider environmental or health effects**, despite inadequate study and a growing body of evidence that demonstrates the opposite conclusion. Aesthetics have been the primary consideration for denial of cell towers.

Revisions to the Telecommunications Act are needed to allow cell towers to be denied by any city on the basis of health and environmental effects that are being recognized. Return local control of cell towers to cities and municipalities is critical.

In summary FCC limits should be based on biological effects demonstrated in the literature, not just heat, and ALARA- as low as reasonably achievable should also be applied.

More research focusing on health surveys are needed. Before that a precautionary approach is needed to protect public health and the environment.

Respectfully submitted,
Cindy Russell, MD
Executive Director of Physicians for Safe Technology

“Waiting for high levels of scientific and clinical proof before taking action to prevent well-known risks can lead to very high health and economic costs, as was the case with asbestos, leaded petrol and tobacco.”
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