

My Response to the Request for Information on Electromagnetic Fields (EMFs), Radiofrequency (RF) Radiation, and Wireless Radiation Exposure

Introduction (Question 2)

I am writing this comment in response to the notice of request for information on electromagnetic field exposure and human health. I'm sharing my perspective as an individual who is hypersensitive to RF and EMF fields. I've been dealing with my sensitivity for over 15 years. I am in my late 30s. My sensitivity has affected most every area of my life but I have worked hard researching and finding workable solutions to be able to build a localized environment with low/no non-native emissions where I do not feel the symptoms like I do when I am exposed to areas with higher electromagnetic field emissions.

This is increasingly challenging as the environment around us is increasing in RF exposure regularly. I love technology, just not how it makes my body feel when I use tech that is emitting high RF / EMF emissions. My hope is that through asking the right questions, gathering the relevant data and not being afraid to deal with challenging situations, solutions can be found that will enable technology to be created without these same negative life impacting effects. I do believe there is a solution to be found.

Summary of My Experience (Question 3)

For context, I personally divide my exposure experience in two categories related to EMF: First, magnetic and electric fields, and second, RF including cell phones and Wi-Fi. I feel these two divisions are important as I feel they need to be approached differently.

In my mid teens early 2000s my sister and I were both experiencing different health challenges. After not being able to find answers with our family doctor, my mom purchased a Tri-field meter. We discovered our bedrooms that were side by side, read 50 mG consistently in the background pulsing up to 100 mG every 10 to 15 seconds. Our living room read 0 mG. We knew nothing about EMF fields at this time but we decided to experiment and my sister and I slept each night in our living room instead of our bedrooms. After a month, my sister had her period return. She had not had a period for 11 months. My own health issues were also abating. At this time, the internet was wired and cell phone intensity was less. We only had one work cell phone in my family that was turned off in the evening as we had a home landline. So by moving to a new house in a different subdivision, less than 5 mins away from our other home, where there were no magnetic fields we were able to see an improvement in our health.

From my experience I do believe that cumulative exposure severely impacts what areas of EMF you are sensitive to. I also feel that length of exposure plays a large impact on health. For myself personally, I found I can be exposed to shorter bouts of exposure particularly to RF fields (example: grocery shopping, visit to the neighbors) could be manageable. However, in order to experience a reduction of the symptoms I experience from these higher RF environments, I

need to move myself to a new environment without manmade emissions to see a true recovery. Even short levels of exposure, under 1 hour will result in symptoms. I liken it to my body feeling bruised on the inside, and the bruise needs to heal to feel better. If you keep pressing on the bruise it will not fully heal.

For the nature, duration, frequency and approximate timing of exposure: I have accumulated too many personal experiences over the years to list them here. Each year, as wireless technology grows I continue to face new challenges around managing my exposure levels to RF/EMF in an effort to maintain a decent quality of life. This said, I would like to provide a basic summary of some of the areas I have had issues with.

Magnetic and Electric Fields: Within the house from unshielded appliances like fridges and alarm clocks, some methods of house wiring can cause this, fluorescent lights, older computers, etc. When travelling: the vehicle itself can have different levels of exposure depending on how it is wired and the features it has. Personally I drive a Chev Truck as I find it has the lowest magnetic fields of the vehicles measured, particularly the passenger and back seats. It is an older truck so it does not have high RF levels. For my home environment, my background is 0 mG. I measure the items I introduce. For my computer setup, I look for shielded cables, use computer monitors with low EMF readings, wired keyboard and mice with my devices. I turn off the wifi of items like laptops, printers and smart TVs, as these devices will search for the frequency connection even when there is no wifi available. Travelling also introduces EMF/RF emissions. For me I am particularly conscious of fields from high voltage power lines. I am aware of this when planning routes to travel, trying to avoid driving along high voltage power lines for any significant distance. I use resources like google maps aerial view to plan my routes before I go places. I do not travel often. Air travel is not an option I feel would be wise for me.

RF Frequency (Cell Phones, Wifi, Wifi Connected Devices, Towers, DECT Phones, etc.): I work remotely to avoid high exposure to these during the day. I do not use a cell phone, except in emergencies for short durations, using texting and speakerphone. I appreciate airplane mode and the ability to turn off wifi and bluetooth signals on a device. When researching phones for family members, I research SAR ratings, however I feel these could be improved both in the measurement themselves as well as the ease to find this information online. I will note that for RF, areas where the signal is consistent in commercial buildings with high ceilings seems to make a difference in how I feel. I still don't feel well enough to be able to work in an office setting, but I am able to handle a longer exposure in some locations. I also find RF frequency is very variable depending on demand. For example: streaming on cellular, streaming on wifi or loading a webpage with just text will change how much tolerance my body has to the exposure. I also factor this in to lower my exposure levels to RF when I go grocery shopping, drive on busy highways, etc. I plan these activities during less busy times.

My symptoms during exposure:

- Intense Head Pain, sensation in the head like a band is wrapped around the head being tightened and tightened. Stabbing pains in through the torso.

- Swelling internally including in the head and torso, which can take days to reduce depending on exposure intensity/duration
- Breathing issues
- Skin Redness
- Issues forming sentences
- Irritability
- Tingling Hands and Arms
- Dizziness
- Waves of Ice Cold alternating with Overheating the body
- Eye twitching
- Sensitive to touch
- Increased heart rate

After exposure (once I return to a low EMF/RF environment) my body needs to heal from the inflammation, as mentioned earlier I feel bruised on the inside and that needs some days to heal. The length of time before I feel better will depend on my exposure duration. During this time, I deal with fatigue and need more sleep than usual.

Cause/Effect: I am an overall healthy person, with no other comorbidities. I do not smoke, I am conscious of what I eat. I am physically active. However my body does not respond well to being in an area with high EMF or RF exposure. Personally I see a direct correlation between my exposure levels and the intensity of my symptoms. With my family over the years we have done many experimental testing to identify if my symptoms do in fact correlate with EMF emissions.

Medical Evaluation: I have worked with both my family doctor and various naturopaths. My family doctor sent me to a specialist in environmental sensitivities at a prominent hospital. The waiting list was over 11 months before I was able to get my appointment. The appointment itself was close to 6 hours with testing and the doctor asked many questions during this period. At the end of the appointment, I was advised by the main Doctor that at this time my best option was to avoid high EMF and RF exposure areas. My response is that it is easier said than done.

Due to this, I have done a lot of independent research and experimentation to be able to find ways to reduce my symptoms and increase my recovery time. However it is very challenging and without the help of my supportive family, my life would look very different.

Changes Experienced when Steps were taken to reduce or eliminate exposure: Earlier I noted that I view magnetic and electric fields as different from RF fields because of how I've had to personally handle them. By finding a location to live and sleep that reads 0 mG for magnetic and electric fields on my EMF meter, I have been able to wisely choose what I introduce to my environment to keep a low exposure level. To note on this: When completing some renovations to my home, particularly in my bedroom area we were very aware of where the wiring was located in the rooms. We also used Armored cable or Type AC/AC90 electrical cable, as it is

wrapped in a flexible, interlocked metal spiral sheath which helps shield any electric and magnetic fields. It is not commonly used in residential but it is used in commercial construction. For RF fields, I have also taken steps to shield my walls and windows from RF fields from surrounding cell phone towers. This has significantly reduced the RF fields inside my home vs outside. For creating this shielding, my research surrounding sound frequency blocking principles, particularly combining both reflective and absorptive attributes have helped me create a calm low emf zone inside my home.

I have taken various steps to reduce, eliminate and control my exposure levels. This has resulted in faster recovery after exposure and an increased tolerance to moderate levels of EMF/RF when I go out. To note: I am symptom free in low emf environments. I believe that there is a cumulative effect where your body is able to tolerate a certain limit, once that limit is reached you become hypersensitive. If you can find an environment where your body experiences some healing, it will be less sensitive to future exposure.

On Question 5 P. - I specifically want to mention SAR (specific absorption rate). As mentioned above, when choosing a cell phone to be used by my family members I've spent significant time researching the specific SAR on different models. My areas of concern are that the head reading is holding the device one inch away from the head and my personal observation is that people who speak on their cell phones do not use an inch difference between the device and their head. I also think it is good when the SAR gives a reading for the body as well as a head, so wiser decisions can be made. It is particularly hard to find the SAR readings for certain cell phone brands like Apple. Some models of phones it is impossible to find the SAR rating online. I feel the SAR rating should be adjusted to better reflect real world exposure. I also would appreciate it if these values were easier to see and that companies had to be more transparent. I also think vehicle manufacturers should provide to the general public electromagnetic and RF emission readings for the drivers, passenger and rear seats of the vehicle.

On Question 7 - When it comes to a scientific method to evaluate individual and population level RF radiation exposure I personally feel it may be useful to have a website where the common citizens can provide a video record using an EMF meter of the exposure levels in their area. I personally have been able to use my EMF meter to record videos of the EMF/RF readings to be able to monitor my environment and make smart choices.

On Question 8 - One area of real world exposure conditions that I think should be factored into the assessment methodology would be the effects of stray electricity and air ionization especially in schools and hospitals.

On Question 9 - Information and Technical data allows individuals to make informed decisions. Technical and exposure related information disclosed would allow individuals who are sensitive or concerned about long-term exposure levels to make wiser decisions. Just like food labeling has an ingredients list, knowing the background magnetic fields in a school classroom or in your hospital room, as well as the real data average exposure level statistics would help people make decisions based on facts.

On Question 11 G - Speaking as a member of the population that does uniquely experience the adverse health effects in response to RF radiation having standards that are lower would allow for a better quality of life, for more chance of healing and recovery, for better treatment in the medical system, for more respect within the professional workplace. As a female, having lower exposure standards for pregnancy or for women who are sensitive and pregnant would create a significant difference in my life. I have not spent much time in a hospital and I have taken careful measures to not get pregnant because I am scared of the side effects of the increased exposure to myself and my baby. I am personally pro-life, so these choices and actions have been hard. The recognition of electromagnetic hypersensitivity as a medical condition, paired with the option for disability if needed based on the circumstances, would also allow for better support during a very challenging time.

On Question 12 - I am not a scientist so I have limited ability to provide this type of evidence. However I have read many articles related to the scientific evidence existing regarding potential adverse health effects associated with RF radiation exposures at level below the current federal exposure limits over the last 15 years as I have been working with my sensitivity. These medical journals, reports and podcasts are from doctors both in Europe, Canada, as well as USA including Texas.

On Question 13 - Related to cumulative exposure I can only speak from personal experience. Based on my personal reactions and observations, cumulative exposure plays a major impact on how the body handles EMF/RF exposure. As mentioned earlier, I believe depending on our body's health we have a certain threshold of exposure that our body can withstand before we start experiencing negative side effects. Cumulative exposure can be defined as exposure over a period of time (days, months, years), or it can be defined as the type of EMF/RF fields you are exposed to in a single setting. I personally experience less intensity of symptoms in an environment where I am dealing with one type of field vs multiple fields simultaneously in a single setting. For example: visiting my neighbours with their Wifi streaming on their smart TV, but they put their cell phones on airplane mode.

On Question 15 - Again I am not an expert in these areas but based on my reading and observations, my suggestion is to consider the cancer rates before and after cell phone installation in areas based on antenna density. For schools, home and workplaces, monitoring inflammation markers.

On Question 16 - Related to Research Gaps, answering questions like what are the different RF and EMF fields doing to our cells and other tissues? What effect is it having on the body's nervous system? How is it affecting how the brain works and the brain waves?

I feel the highest priority should be providing support for those hypersensitive that exposure is hindering their daily life, identifying safer standards, determining the negative impact caused by these EMF and RF fields so that solutions can be researched and implemented.

On Question 18 - Additional Recommendation: Relocation is possible to live and sleep without man-made magnetic fields and no RF fields however this is not an easy journey and even once you find a location, external influences like utility companies smart meters, your neighbors' wifi and a new build of a cell phone tower in your community can instantly cause a change in your environment as they are introducing new frequencies into your airspace. These types of challenges are very difficult, especially when these factors are making you sick, so you don't have the energy to deal with the situation properly. My recommendation is outlining a way for those with special needs in this area to be able to to mitigate these circumstances. For example: Smart Meters on your gas inside your house, smart meters to get electrical service. Both send out regular transmissions, about every 10 seconds. Consumers should be able to opt out of this, or have the option to have the data of usage sent once a month or bi-weekly in a single transmission instead of constant monitoring.