Comment on Request for Information: Electromagnetic Fields, Radiofrequency Radiation, and Wireless Radiation Exposure

I am Maria Gahry, DNP, APRN, FNP-BC, a board-certified Family Nurse Practitioner practicing integrative medicine. I care for patients across the lifespan, from children and adolescents to older adults. Beyond hormone and thyroid health, my practice focuses on complex chronic illness:

- myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS)
- Lyme and tick-borne disease
- mold and biotoxin illness
- autism and ADHD
- gut health

These patients often carry a heavy total environmental burden, and their recovery depends on reducing it. My practice rests on a core principle of integrative care: health is shaped by the environment our bodies evolved in, and modern environmental exposures deserve the same scrutiny we give to diet, toxins, and medications.

I support HHS taking an active role in examining the potential health and environmental effects of wireless radiation. Questions about human health should be addressed by federal agencies with appropriate expertise in medicine, biology, epidemiology, and public health. The experiences of individuals and families who report being affected should be considered alongside the scientific evidence.

I submit this comment to urge HHS to treat wireless radiation as a meaningful environmental health risk. I ask that it act on the evidence that already exists rather than wait for certainty that may take decades to arrive.

Current federal limits do not reflect current science. U.S. RF exposure limits were adopted in 1996 and protect primarily against tissue heating. In 2021, in *Environmental Health Trust v. FCC*, the D.C. Circuit Court of Appeals found that the FCC had failed to give a reasoned explanation of why those limits protect against non-thermal effects, long-term exposure, and harm to children. A standard built for a world of occasional phone calls now governs continuous, lifelong, whole-body exposure that begins before birth.

There is credible evidence of biological effects below current limits:

- In 2011, the International Agency for Research on Cancer classified RF electromagnetic fields as possibly carcinogenic to humans (Group 2B).
- The National Toxicology Program's 2018 study, funded by HHS, found clear evidence of malignant heart schwannomas and some evidence of brain gliomas in male rats exposed to cell phone RF radiation. The Ramazzini Institute independently reported increased heart schwannomas at far lower, base-station-level exposures (Falcioni et al., 2018).
- A large body of laboratory research reports oxidative stress and mitochondrial dysfunction following RF exposure (Yakymenko et al., 2016).

- A meta-analysis found that mobile phone exposure was associated with reduced sperm motility and viability (Adams et al., 2014).
- Exposure to device light in the evening suppresses melatonin and delays circadian timing (Chang et al., *PNAS*, 2015). Circadian disruption is tied to metabolic, endocrine, and mood disorders.

Oxidative stress, mitochondrial dysfunction, and circadian disruption are not abstract findings for my patients. They are central features of ME/CFS, post-infectious and biotoxin illness, and many neurodevelopmental conditions. For patients whose cellular energy systems are already compromised, an additional exposure that may act on the same pathways deserves careful study rather than dismissal.

I recognize that recent reviews, including work commissioned by WHO, have not found an association between mobile phone use and brain cancer. Cancer, however, is not the only outcome that matters. Those reviews do not settle the questions most relevant to my patients: developmental, reproductive, endocrine, sleep, and neurological effects of chronic, multi-source exposure beginning in pregnancy and childhood.

Children are not small adults. Modeling shows that children's heads absorb more RF energy than adults' because of thinner skulls and higher tissue water content (Gandhi et al., 2012). Their nervous, endocrine, and reproductive systems are still developing. Today's children are the first generation exposed from conception onward. No safety standard was designed with them in mind.

What I see in clinical practice. In my practice, I have seen patients with long-standing ME/CFS, mold illness, Lyme disease, and other complex chronic conditions finally begin to heal once they took active steps to reduce and shield from EMF exposure. These patients had often not progressed despite years of other treatment. Those steps included hardwiring their homes, removing Wi-Fi and devices from bedrooms, and limiting time near transmitters.

Some of my most severely affected patients report symptoms so provoked by exposure that they are effectively confined to their homes. They are unable to work, attend school, travel, or enter ordinary public spaces, including medical offices. These patients are too often dismissed or discriminated against by other healthcare practitioners. Their symptoms are attributed to anxiety or not taken seriously at all. That dismissal delays care isolates already vulnerable people, and compounds their suffering. Whatever the full mechanism turns out to be, their disability is real and deserves a serious clinical and public health response.

My recommendations to HHS:

1. Fund independent, long-term research on non-cancer outcomes. Priorities should include prenatal exposure, child neurodevelopment, fertility, endocrine and thyroid function, sleep, and mitochondrial health, including in people with complex chronic illness. HHS should complete and extend the line of research begun by the NTP.
2. Support updating federal exposure limits to account for non-thermal biological effects, cumulative multi-source exposure, and the greater vulnerability of children, pregnant women, and the chronically ill.
3. Establish a system for clinicians to report suspected RF-related adverse effects, so patterns can be tracked rather than dismissed as anecdote.

4. Develop clinical guidance for evaluating and caring for patients who report EMF-related symptoms. Support accommodations that allow them to access healthcare, education, and public spaces, such as low-exposure rooms and telehealth options.
5. Require clear public disclosure of device SAR values and safe-use guidance at the point of sale.
6. Issue precautionary guidance for families, schools, and clinicians:
    - keep devices off the body and out of bedrooms
    - prefer wired connections in schools and homes where practical
    - reduce children's screen exposure, particularly in the evening
7. Educate healthcare professionals on environmental exposures, including RF, as part of routine history-taking.

I urge HHS to carefully evaluate these experiences and the scientific evidence, and to identify gaps in current research. HHS should give particular attention to children and other potentially vulnerable populations, and establish appropriate federal research priorities regarding wireless radiation and public health.

The precautionary principle is a cornerstone of nursing and public health practice: when there is credible evidence of potential harm to vulnerable populations, we act to reduce exposure while research continues. The evidence on wireless radiation has met that threshold. I urge HHS to lead.

Respectfully submitted,

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