Public Comment on RF/EMF Exposure, Health Research, Transparency, and Consumer Choice

Response to Request for Information — Questions 2–18

Submitted perspective: Individual consumer and concerned member of the public

This comment requests evidence-based review, public disclosure, independent research, and meaningful options to decline or reduce wireless exposure. It does not claim that every reported symptom is caused by RF exposure or that experimental capabilities described in patents are deployed in commercial networks.

2. Perspective represented

I submit these comments in my personal capacity as an individual consumer and concerned member of the public. I do not purport to represent a government agency, healthcare profession, or research institution. My priorities are transparency about actual RF/EMF system operations and research, credible health-risk evaluation, public accountability, and the ability to decline or limit wireless technology without unreasonable barriers to essential services.

3. Personal experiences and potential adverse effects

I am not submitting a personal medical case report or asserting a medically established RF-related diagnosis. I encourage agencies to make it possible for individuals to submit voluntary, privacy-protective reports specifying source, approximate exposure conditions, timing, symptoms, medical evaluation (if any), and changes after exposure reduction. Such reports should be taken seriously as signals for investigation but should not, by themselves, be treated as proof of causation.

Public submission portals should prominently warn against including names, addresses, medical records, or other personally identifying or protected health information.

4. Clinical, occupational, and research observations

I do not claim professional clinical or occupational observations. Agencies should invite standardized reporting from clinicians and occupational health professionals, including symptom definitions, onset, exposure estimates, confounders, comparison groups, and follow-up. Independent replication and transparent publication of null as well as positive findings are essential.

5. Exposure standards and risk assessment

Federal agencies should systematically compare FCC exposure limits and test procedures with the current recommendations of the International Commission on Non-Ionizing Radiation Protection (ICNIRP), IEEE standards, and relevant WHO reviews. They should publish a plain-language crosswalk explaining what each framework addresses, its assumptions, and its limitations.

Standards should be reassessed as evidence develops, with particular attention to near-body use, actual device positions, higher frequencies, duty cycles, beamforming, multiple simultaneous sources, and long-term exposure. Exposure classifications should record frequency, field strength or power density, SAR

where applicable, modulation, pulse characteristics, distance, duration, and uncertainty. These factors should be studied rather than assumed to establish harm.

Agencies should disclose who funded each evaluation, how conflicts of interest were managed, what studies were included or excluded, and why. Independent laboratory replication and publicly accessible methods and results should be required where feasible.

Research should test whether practical measures such as wired connectivity, device placement, lower-transmit-power modes, and other engineering changes reduce measured exposure under real-world conditions; whether they improve health outcomes is a separate question requiring rigorous study.

6. Evidence regarding current exposure limits

Established RF hazards at sufficiently high exposures include tissue heating; exposure limits are designed to protect against recognized adverse effects. Whether long-term, lower-level exposures cause additional health outcomes remains an area of scientific investigation, with findings varying by outcome and study design. Agencies should publish a current systematic evidence review distinguishing demonstrated effects, inconsistent associations, biological findings of uncertain clinical significance, and unresolved questions. Compliance with a limit should not be presented as proof that every conceivable long-term outcome has been studied.

7. Methods for characterizing exposure

Available approaches include calibrated broadband and frequency-selective field measurements, personal RF exposimeters, device power and usage logs, network and infrastructure data, computational dosimetry, and SAR or power-density assessments. Each has limitations: body shielding, sampling intervals, frequency coverage, indoor variation, and imperfect proxies for actual absorbed dose. Agencies should support validated combined measurement protocols.

8. Needed improvements in real-world exposure assessment

Studies should capture multiple sources simultaneously; indoor and outdoor conditions; distance and body position; uplink and downlink activity; beamforming and traffic variation; time-averaged and peak measurements; and exposures across days, months, and years. Data should include calibration, uncertainty, measurement location, and protocols, with privacy safeguards. Exposure maps should not rely solely on modeled estimates where representative field measurements are feasible.

9. Information that should be disclosed

Consumers, residents, workers, schools, clinicians, and local governments should receive understandable information on operating frequency bands, applicable exposure limits, representative measured or modeled levels, test conditions, device placement assumptions, maintenance and compliance procedures, and how to request independent testing or report concerns.

Government-funded research on RF interactions with biological systems—including neurological research—should be searchable and disclosed to the fullest extent legally permissible. Agencies should distinguish patented or experimental techniques from validated capabilities and documented civilian deployment. Trade-secret or security claims should not become blanket substitutes for meaningful public oversight.

Users should be clearly told when a device transmits wirelessly, whether transmission can be disabled, and what wired or non-transmitting alternatives exist.

10. Public-health data and surveillance

Support coordinated, privacy-protective systems using disease registries, occupational monitoring, environmental surveys, longitudinal cohorts, and voluntary adverse-event reports. Disease clusters and spontaneous reports can generate hypotheses but cannot establish causal links without comparison populations and rigorous exposure assessment.

Priority should go to prospective cohorts with objective exposure data and health outcomes, preregistered analysis plans, independent governance, and safeguards against surveillance of individuals. Agencies should publish data-quality limitations and make de-identified results available to qualified independent researchers.

11. Sensitive populations

Research and communication should explicitly consider children, pregnant people, older adults, people with implanted medical devices, occupationally exposed workers, and people with relevant preexisting conditions. Device interference risks for implants should be evaluated separately from general biological health effects. Agencies should investigate whether different exposure patterns, body size, duration, or workplace conditions justify tailored guidance, without assuming a heightened health risk where evidence is insufficient.

Schools and healthcare facilities should be offered feasible wired options and accessible exposure information, particularly when individuals request reasonable accommodations.

12. Evidence below federal exposure limits

The evidence base includes epidemiologic studies, animal studies, controlled human investigations, and laboratory research, but these differ substantially in exposure characterization, quality, endpoints, and relevance to everyday conditions. Some studies report associations or biological changes; others do not. Agencies should commission updated, independently conducted systematic reviews that evaluate bias, replication, dose-response relationships, and causal inference, rather than treating either a single positive or a single negative study as definitive.

13. Cumulative exposure across emerging technologies

For 5G, evolving 6G research, Wi-Fi, satellites, IoT, wearables, smart appliances, smart cities, autonomous vehicles, wireless medical devices, and smart meters, cumulative exposure depends on actual operating frequency, output power, duty cycle, distance, network design, and use—not simply the number of connected devices. 6G remains an evolving technology category, so speculative future designs should not be described as existing routine exposure.

Agencies should measure representative mixed-source environments and publish comparative scenarios, including worst-case credible conditions and ordinary use. Near-body transmitters and distant infrastructure should be assessed with appropriate distinct metrics. Longitudinal datasets should track how exposure changes as networks and devices evolve.

14. Potential environmental effects

Support reproducible research on potential effects on wildlife, pollinators, plants, and livestock using environmentally relevant exposure levels, appropriate controls, and transparent dosimetry. Existing findings should be assessed for methodological quality and consistency. Environmental monitoring should avoid assuming either universal safety or harm without sufficient evidence.

15. Wireless infrastructure and communities

Infrastructure evaluation should consider proximity to homes, schools, childcare facilities, healthcare settings, and workplaces; cumulative neighborhood exposure; antenna density; small-cell configuration; and plausible exposure to livestock. Proximity alone is an imperfect indicator of dose, so public decisions should use transparent site-specific modeling and, where warranted, calibrated measurements.

Communities should receive advance notice of installations, understandable exposure assessments, meaningful opportunities to comment, and access to independent compliance information. Agencies should explain which decisions are governed by federal law and which local authorities retain discretion.

16. Highest-priority research gaps

Priorities are: (1) long-term prospective research with validated personal exposure; (2) independently replicated studies of neurological, sleep, reproductive, and other health endpoints; (3) combined-source and near-body exposure; (4) new frequency ranges, modulation, and beamforming; (5) research involving children and occupationally exposed groups; (6) improved dosimetry and transparent uncertainty analysis; and (7) evaluation of practical exposure-reduction measures.

All major federally supported studies should preregister hypotheses where appropriate, disclose funding and conflicts, publish methods, and report null findings as well as positive findings.

17. Coordination among federal agencies

The FDA should clarify its role in reviewing scientific evidence relevant to wireless consumer products and medical devices. NIH should fund independent basic, mechanistic, and longitudinal research. CDC should coordinate public-health communication, surveillance methods, and clinician-facing resources. The FCC should provide clear, accessible technical compliance and exposure information and coordinate with health agencies on evidence reviews.

An interagency public dashboard should list research projects, funding sources, methodologies, milestones, findings, regulatory reviews, and unresolved questions. A public advisory process should include independent scientists, clinicians, engineers, consumers, and community representatives, with conflict-of-interest safeguards.

18. Additional recommendations: transparency and the right to say no

Transparency must extend beyond general safety assurances. The public should know what RF/EMF systems are actually designed and authorized to do, how they operate, what research has been performed on possible biological interactions, and what evidence supports regulatory decisions. Agencies should clearly differentiate military or experimental research, patents, commercial products, and verified deployment; the existence of a patent does not establish that its claimed capabilities are used in 5G or 6G networks.

Meaningful consumer choice is equally important. I request federal evaluation of practical opt-out rights and wired alternatives for internet access, utility metering, household products, education, and healthcare where feasible. Consumers should be able to disable optional wireless functions and should not face unreasonable fees or loss of essential service merely for choosing a technically feasible non-wireless option.

Where wireless public infrastructure cannot be individually declined, agencies should address transparency, advance notice, public input, independent measurement, and reasonable accommodations. Informed consent for personal devices is not identical to a legal veto over community infrastructure; federal agencies should identify existing legal constraints and propose realistic protections.

Finally, I request a formal public response identifying which recommendations will be adopted, rejected, or studied further, with explanations and timelines. Public confidence must rest on verifiable evidence, meaningful disclosure, and genuine choice.

Selected reference frameworks and research resources

- FCC, 47 CFR §§ 1.1307(b), 1.1310 and 2.1091–2.1093 (RF exposure compliance framework).
- ICNIRP (2020), Guidelines for Limiting Exposure to Electromagnetic Fields (100 kHz to 300 GHz), Health Physics 118(5):483–524.
- IEEE Std C95.1-2019, Safety Levels with Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz.
- WHO, Radiofrequency electromagnetic fields: health risk assessment resources and systematic review initiatives.
- National Toxicology Program, Cell Phone Radio Frequency Radiation Studies (animal toxicology research; relevance to human exposure requires careful interpretation).
- IARC Monographs Volume 102 (2013), Non-Ionizing Radiation, Part 2: Radiofrequency Electromagnetic Fields (classified RF fields as possibly carcinogenic to humans, Group 2B, at that time).

Submission note: Verify the RFI docket number, deadline, and portal instructions before uploading. This comment intentionally omits personal identifying and medical information.