MASTER EVIDENCE DOCUMENT – RF-EMF / Microwave Radiation & Neurological Symptoms

Purpose of Submission
I am submitting this document to provide research and personal observations concerning possible health effects associated with radiofrequency electromagnetic-field exposure. I respectfully ask the agency to review evidence concerning long-term exposure, possible non-thermal biological effects, neurological symptoms, and the needs of people who report sensitivity to wireless technology. This document includes scientific studies, government and court materials, reviews, and personal observations. The studies vary in strength and include human, animal, laboratory, observational, and opinion-based evidence.

1. Landmark Federal Court Decision – EHT et al. v. FCC (2021)
Title / Source: Environmental Health Trust et al. v. Federal Communications Commission, U.S. Court of Appeals for the D.C. Circuit (2021).
Link: https://ehsciences.org/lawsuit-wireless-radiation-safety/

Key Findings: In 2019 the FCC chose not to update its 1996 radiofrequency (RF) radiation exposure limits and terminated its legal inquiry into scientific evidence of adverse biological effects. Petitioners (including Environmental Health Trust and Children's Health Defense) sued and filed 11,000 pages of evidence. In 2021 the D.C. Circuit ruled the FCC's decision "arbitrary and capricious" because it failed to consider the non-cancer evidence of adverse health effects caused by wireless technology. The court specifically ordered the FCC to address non-cancer effects (nervous, reproductive, immune, endocrine systems), long-term exposure, children's vulnerability, environmental impacts, and outdated device testing procedures. The FCC has still not fully responded to the court mandate. Relevance: The decision found that the FCC had not adequately explained its decision or addressed important evidence concerning non-cancer effects, long-term exposure, children, environmental effects, and device testing. The decision supports continued review of the evidence; it does not by itself establish that RF-EMF caused any particular person's medical symptoms.

2. The 11,000-Page Evidentiary Record Filed in EHT et al. v. FCC
Title / Source: Petitioners' Joint Appendix – 447 exhibits in 27 volumes (approximately 11,000 pages).
Key documents page:
https://ehtrust.org/environmental-health-trust-et-al-v-fcc-key-documents/

Key Findings: Documented research and testimony indicating brain damage, memory problems, headaches and neurological effects; reproductive harm; DNA and genetic damage; synergistic effects; brain cancer and other tumors; people reporting illness from exposure (radiation sickness / EMR Syndrome); electromagnetic hypersensitivity documentation; and adverse impacts on wildlife, plants, trees, birds and bees. The court explicitly noted that the FCC ignored the testimony of persons injured by wireless radiation. Petitioners argued that the inadequate FCC guidelines are used to deny reasonable accommodations under the Americans with Disabilities Act (ADA). Relevance: Provides both scientific compilations and direct human evidence of reported neurological illness attributed to wireless radiation. Documents reported symptoms and supports further evaluation of possible health effects and the basis

for disability-related accommodations.

3. RF-EMF / Microwave Radiation – Genetic Damage, Cancer Risk & Neurological Symptoms – Evidence Summary

Multiple peer-reviewed studies link RF-EMF exposure to DNA damage, chromosomal aberrations, oxidative stress, and neurological symptoms such as headaches, dizziness, vertigo, and cognitive issues. Official reviews and reports (BioInitiative, IARC, NTP) document biological effects and classify RF-EMF as possibly carcinogenic at levels below current safety standards. Mechanisms such as activation of voltage-gated calcium channels (Pall, 2013) and patents involving subliminal low-frequency pulses (Loos, 1998–2000) suggest plausible biological pathways. Peer-Reviewed Studies include Gulati et al. (2024), Zothansiama et al. (2017), Gandhi et al. (2015), Abdel-Rassoul et al. (2007), Yakymenko et al. (2016), and Mevissen et al. (2025 – WHO-commissioned). The Mevissen review found high certainty that RF-EMF exposure causes cancer in animals, with strongest evidence for malignant heart schwannomas and gliomas. Official Reports: BioInitiative Report (2007), IARC (2011) Group 2B classification, National Toxicology Program (NTP) 2018 clear evidence of tumors in rats. Some studies report oxidative stress, DNA damage, or related biological effects after RF-EMF exposure. Conclusion: The cited literature reports biological effects and possible health associations involving RF-EMF, including oxidative stress, DNA damage, neurological effects, and cancer findings in some animal studies. The evidence varies in quality and does not establish that RF-EMF caused my personal symptoms. It does support continued research, careful review of long-term exposure, and consideration of precautionary measures for people who report symptoms associated with wireless exposure.

4. Additional Supporting Studies – Animal, Mechanistic & Extra Evidence
Qian et al. (2026), Meyer et al. (2024), and Sun et al. (2025) provide further animal and review evidence on learning/memory impairment, oxidative stress, DNA damage, and effects on brain activity and cognition.

5. Additional Supporting Evidence – 2025 Genotoxicity Scoping Review
Weller et al. (2025) examined more than 500 studies and found a higher proportion of DNA-damage findings with real-world devices, pulsed or modulated signals, and longer exposures. Authors conclude RF-EMF exposures may be genotoxic and could pose a cancer risk, supporting precautionary measures.

6. Evidence-based summary: RF-EMF from everyday wireless devices
Everyday devices emit pulsed or modulated RF-EMF. Highest near-field exposure to the head and ear occurs when a phone is held against the ear. Indoor multi-source environments create continuous background fields. For individuals with prior ear or vestibular issues, even weaker ongoing exposure may trigger or worsen symptoms such as ear pressure, temporal sensations, dizziness, or headaches. Documented non-thermal mechanisms discussed in the literature include oxidative stress and voltage-gated calcium channel activation.

7. Theory on Vestibulocochlear Nerve Pathway (Personal Mechanistic Explanation)

One possible explanation I am investigating is whether exposure may aggravate symptoms involving the auditory or vestibular system. Damaged or sensitive hair cells in the cochlea and nearby vestibular organs sit on the vestibulocochlear nerve. When these structures are irritated, they may send abnormal signals that produce ear pressure, a sick sensation in the left temple, migraine-type pain, vertigo, dizziness, and brain fog. Distance, ear plugs, or a noise-reducing headset frequently reduces symptoms. This is offered as a working theory consistent with certain patents and personal experience after ear trauma.

8. Additional Supporting Evidence – Mast Cells & Dura Mater
Tümkaya et al. (2019) found that repeated 900 MHz exposure nearly doubled mast cells in the rat dura mater and increased degranulation. Mast-cell activation in the dura is known to contribute to headache and migraine-type pain.

9. American Academy of Environmental Medicine (AAEM) 2025 Position Paper
The AAEM states that current RF safety standards only address short-term heating effects and fail to protect against long-term, low-level, non-thermal biological effects. The Academy recognizes electromagnetic hypersensitivity (EHS), in which individuals report headaches, fatigue, insomnia, and other symptoms that frequently improve when exposure is reduced.

10. Additional Supporting Evidence – Clinical EHS Studies (Belpomme series)
The authors reported biomarkers in some people identified as having EHS; these findings remain debated and require further study. Common reported symptoms include headaches, dizziness, vertigo, ear pressure/pain, temporal sensations, nausea, and cognitive impairment. Many patients report symptom improvement with reduced RF exposure.

11. Additional Supporting Evidence – Elyasi Systematic Review (2024)
This review of studies 2007–2022 reported associations between cell phone radiation and oxidative stress, DNA fragmentation, and other cellular effects, and recommended minimizing unnecessary exposure.

12. Personal Observations

For approximately 15 years I have experienced earaches, migraines, dizziness, a persistent left-temple sick or “rotting” sensation, vertigo, intermittent tinnitus, brain fog, nausea, and fatigue.Over the years, through personal observation, conversations with others, and systematic trial and error, I have come to associate these symptoms with exposure to cell phones, Wi-Fi, Bluetooth, and other wireless devices. I have found that increasing distance from these sources and wearing a headset that specifically covers my left ear makes a substantial difference in how I feel. The longer I remain in higher-exposure environments, the worse the symptoms become — similar to repeatedly picking at a scab. The longer I am away from the signals, the more the symptoms fade and the better I feel.For example, this year I converted my laptop to a fully wired setup, including the monitor, mouse, and keyboard. Previously, even with a headset, I could tolerate only 15–20 minutes before my symptoms became so significant I had to shut down and turn off everything. With the fully wired system and headset, I can now work for several hours when

seated approximately 22 feet away from the PC and hotspot.I am not claiming that the cited studies prove RF-EMF caused my symptoms; I am reporting my own personal observations and asking that the broader evidence be taken seriously.

13. Early Canadian Government Laboratory Report – Microwave Radiation as Environmental Pollution (NRC, ca. 1973)
National Research Council of Canada Report LTR-CS-98 warned that the rapidly increasing use of microwave devices could raise ambient microwave background radiation to potentially dangerous levels and framed uncontrolled proliferation as environmental pollution. It called for systematic investigation of non-thermal and long-term effects.

Final Statement
This document presents scientific literature, government and legal materials, and personal observations for consideration. The sources vary in strength and do not all establish causation in humans. I am not claiming that every cited study proves that RF-EMF caused my symptoms. I am asking that the evidence concerning long-term exposure, possible biological effects, neurological symptoms, and accommodation needs be reviewed seriously and fairly.

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