Wireless Infrastructure Association



What the Science Says:

Wireless Networks and Health Safety

The Facts:

Wireless devices and facilities must adhere to radio frequency (RF) emission guidelines established and enforced by the Federal Communications Commission (FCC).[1]

According to the FCC, "measurements made near typical cellular and PCS cell sites have shown that ground-level power densities are well below the exposure limits recommended by RF/microwave safety standards used by the FCC."[2]

The FCC has stated "no scientific evidence currently establishes a definitive link between wireless device use and cancer or other illnesses."[3] The FCC continuously monitors new study results.

The FDA states that "the weight of scientific evidence has not linked cell phone radio frequency radiation with any health problems and " the scientific evidence does not show a danger to users of cell phones from radio frequency exposure, including children and teenagers."[4]

The World Health Organization (WHO) has also stated "to date, and after much research performed, no adverse health effect has been causally linked with exposure to wireless technologies."[5]

The American Cancer Society states that "So far, there is no clear evidence that cell phone use increases brain tumor risk. Ongoing international studies continue to follow long-term cell phone users to monitor potential health effects." Additionally, the organization states "current evidence has not shown that RF radiation exposure from 5G networks is a health concern. Research on long-term exposure is ongoing."[6]

Under federal law, state and local governments may not regulate the placement, construction, and modification of wireless facilities on the basis of environmental effects of RF emissions if the facilities comply with FCC regulations governing RF emissions.[7]





Latest Research

A World Health Organization-commissioned international systematic review of 5,000 studies from 22 countries over a nearly 30-year period was released in 2024. Focusing on 63 reports, the analysis found that cell phone and cell tower radiofrequency waves (RF) had no link to brain or childhood cancer risk. Persuasively, as the use of cell phones has skyrocketed, cases of brain cancer have remained steady.[8]

Published by the Journal of National Cancer Institute in 2022, a study conducted with more than 700,000 women over 15 years concluded that "[o]ur findings support the accumulating evidence that cellular telephone use under usual conditions does not increase brain tumor incidence."[9]

In 2020, the U.S. Food and Drug Administration released a review of 100 studies of animal exposure and found "these studies have not produced any clear evidence that RFR exposure has any tumorigenic effect."[10] The FDA has stated "[t]o date, there is no consistent or credible scientific evidence of health problems caused by the exposure to radio frequency energy emitted by cell phones." The FDA included 5G products when making this evaluation.[11]

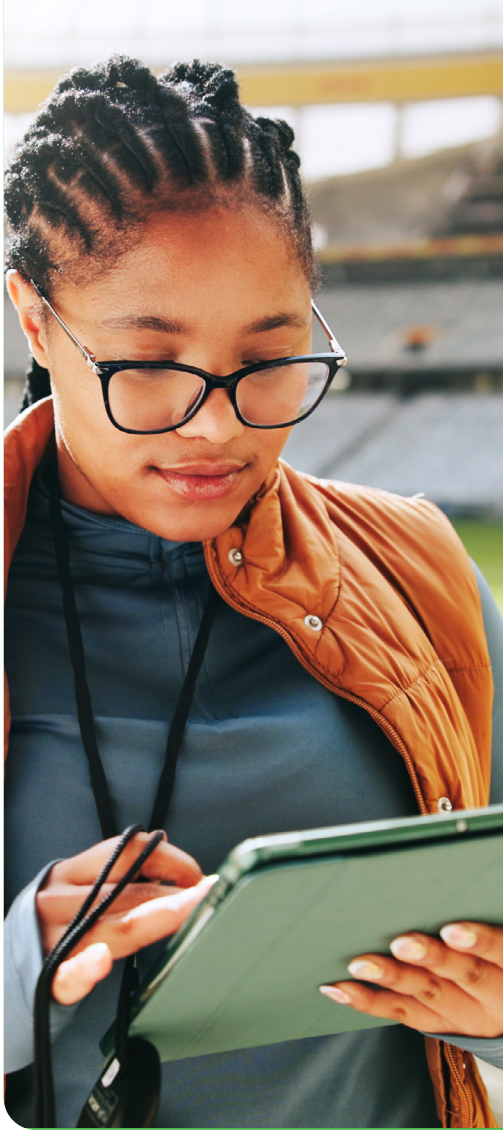
The journal for National Academy of Sciences published research findings in May 2025 entitled "5G-exposed human skin cells do not respond with altered gene expression and methylation profiles." The study states that "results show with great clarity that in human skin cells, even under worst-case conditions, no significant changes in gene expression or methylation patterns are observed after exposure" and "the results strongly support the assessment that there is no evidence for exposure-induced damage to human skin cells."[12]

Published by the Toxicology Sciences journal, in January 2026, a study conducted in collaboration with Japanese and Korean provides strong evidence that long-term exposure to 900 MHz RF-EMFs did not produce reproducible carcinogenic or genotoxic effects in male rats. No statistically significant increases in the incidences of neoplastic or non-neoplastic lesions were found in any major organ, including the brain, heart, and adrenal glands. Genotoxicity assays revealed no evidence of DNA damage or chromosomal aberrations in RF-exposed rats.[13]

In 2019, the IEEE, a leading engineering standards organization, published updated safety limits for exposure to electric, magnetic, and radio-frequency (RF) energy. The limits were developed by its International Committee on Electromagnetic Safety, which spent years reviewing the research. The goal was to provide "science-based exposure criteria to protect against established adverse health effects in humans."

After reviewing the evidence, the committee reached three main conclusions:

- No reproducible harm at low levels. Studies have not consistently shown adverse health effects from low-level RF exposure too weak to heat the body, such as RF from phones or cell towers.
- No credible sign of harm from long-term exposure. Chronic exposure below the IEEE standard's limits showed no credible indication of adverse effects.
- No established pathway to harm. Scientists have not identified a confirmed way that exposure at these levels could cause health effects.[14]



[1] https://www.fcc.gov/consumers/guides/wireless-devices-and-health-concerns
[2] https://www.fcc.gov/consumers/guides/human-exposure-radio-frequency-fields-guidelines-cellular-and-pcs-sites
[3] https://www.fcc.gov/consumers/guides/wirelessdevices-and-health-concerns
[4] https://www.fda.gov/radiation-emitting-products/home-business-and-entertainment-products/cell-phones
[5] https://www.who.int/news-room/questions-and-answers/item/radiation-5g-mobile-networks-and-health
[6] https://www.cancer.org/cancer/risk-prevention/radiation-exposure/cellular-phones.html
[7] 47 U.S.C. § 332(c)(7)(B)(iv)
[8] https://doi.org/10.1016/j.envint.2024.108983
[9] https://pubmed.ncbi.nlm.nih.gov/35350069/
[10] https://www.fda.gov/media/135043/download?attachment
[11] https://www.fda.gov/radiation-emitting-products/cell-phones/scientific-evidence-cell-phone-safety
[12] https://academic.oup.com/pnasnexus/article/4/5/pgaf127/8124427?login=false#513368069
[13] https://academic.oup.com/toxsci/advance-article/doi/10.1093/toxsci/kfag002/8423504
[14] *IEEE's review of non-thermal effects found that "examination of the [RF] exposure literature revealed no reproducible low level (nonthermal) adverse health effects." It further concluded that "the weight-of-evidence provides no credible indication of adverse effects caused by chronic exposures below levels specified in this standard" and that "no biophysical mechanisms have been scientifically validated that would link chronic exposures below levels specified in this standard to adverse health effects."* https://ieeexplore.ieee.org/document/8859679