CELL TOWER RADIATION EXPOSURE LIMITS U.S. & WORLDWIDE

U.S. PERMITS HIGH RF RADIATION EXPOSURE

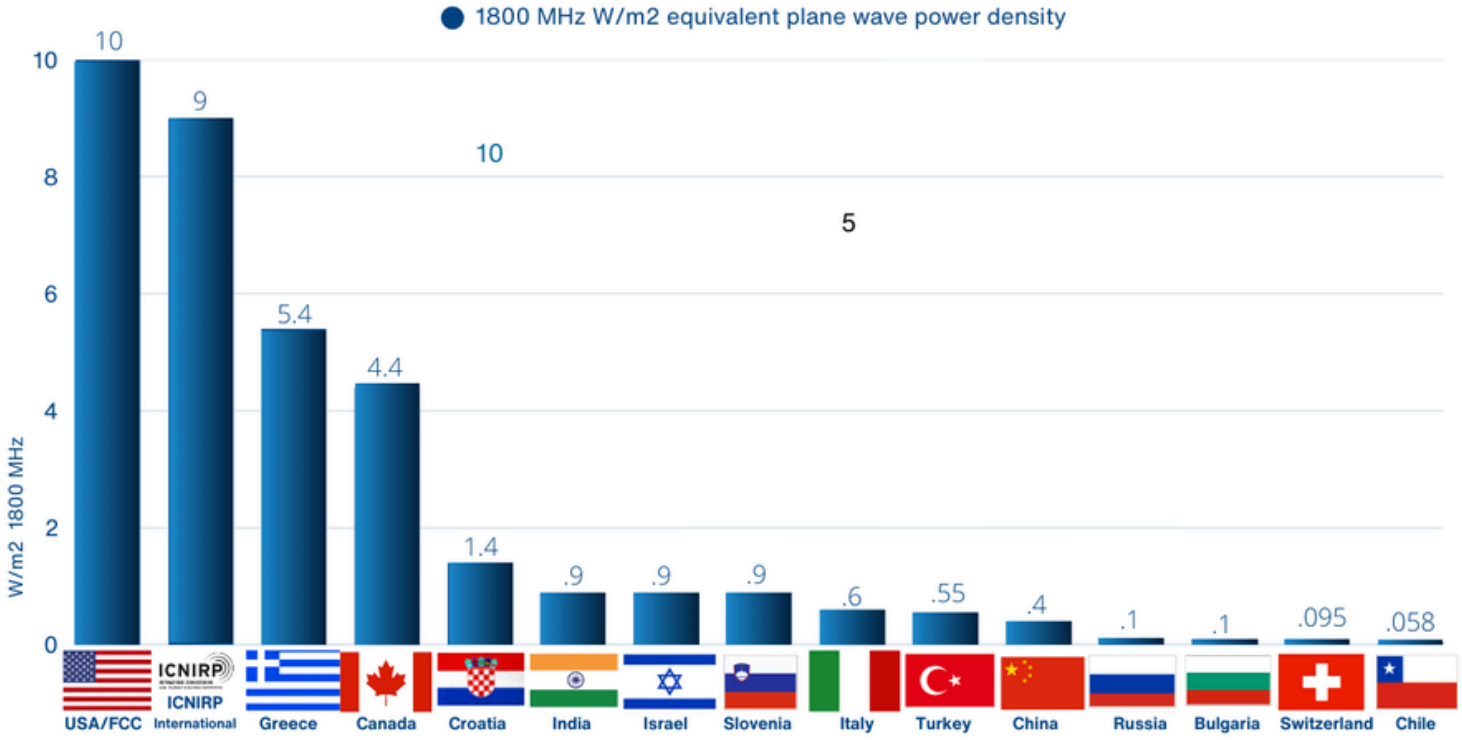
The U.S is among the countries that allow the highest levels of cell phone radiofrequency (RF) radiation in the environment —with regulations that have remained unchanged since 1996, despite scientific studies showing harmful effects at far lower exposure levels.

Environmental Sources

- Cell towers
- 4G/5G small cells
- Wi-Fi networks
- Rooftop antennas

COUNTRY COMPARISON OF WIRELESS RF LIMITS

for Ambient Exposures That Apply to Schools and/or Homes (1800 MHz)
Environmental Sources: Cell Towers, Wi-Fi Networks, Cell Antennas



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U.S. LACKS SCIENTIFIC OVERSIGHT

The Federal Communication Commission's wireless radiofrequency (RF) radiation limits are used to assess RF levels indoors (like classrooms and homes) and outdoors (such as playgrounds and sports fields) and serve as the compliance limit for cell towers.

Many governments enforce stricter limits, especially in children's areas. Italy and Switzerland take a precautionary approach, while China and Russia maintain active RF research programs. However, the U.S. has no agency conducting ongoing scientific review of the long term effects of cell tower radiation despite a federal court order.

73.6% of studies on people living near cell towers found effects: radiofrequency sickness, cancer and bio-chemical changes.

-RESEARCH REVIEW BY BALMORI (2022) *ENVIRONMENTAL RESEARCH*

POLICIES TO MINIMIZE EXPOSURE

U.S. POLICY ON CELL TOWERS NEAR SCHOOLS

While numerous countries ban cell towers at schools, the U.S. lacks any federal laws to minimize exposure in classrooms. Some state and local communities have taken steps to safeguard children by restricting towers at schools or enacting ordinances to ensure a setback that distances towers away from schools and homes.*

School District Bans on New Cell Towers: Los Angeles CA, Palo Alto CA, Temecula Valley CA, West Linn-Wilsonville OR, Portland OR, Loudoun County VA.

Local Policies with Cell Tower Setbacks: Shelburne MA (3,000 ft away from schools, 1,500 ft away from homes), Williamson County TN (1,500 ft schools), Copake NY (1,500 ft homes/schools), Sallisaw OK (1,500 ft homes), Walnut Creek CA (1,500 ft schools), Calabasas CA (1,000 ft homes/schools), Scarsdale NY (500 ft homes/schools), San Diego County CA (300 ft schools), Bedford NH (750 ft residential), Bar Harbor ME (1500 ft schools).

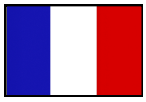
New Hampshire: State Commission Report on 5G Health and Environment recommends a 1,500 foot setback for cell towers and 4G/5G antennas.

INTERNATIONAL POLICIES TO PROTECT CHILDREN

Russia: Antennas for cell towers and base stations are no longer permitted near schools, with a national plan in place to relocate existing sites away from schools.

Lithuania: Cell antennas are prohibited on kindergartens and hospitals.

Greece: Towers are banned on school grounds. Stricter RF limits apply within a 300-meter radius around kindergartens, schools, hospitals, and elderly care facilities.



France: For towers or wireless facilities within 100 meters of schools, daycare centers, or healthcare establishments, levels must be minimized.

Bangladesh: Cell towers are prohibited on residential properties, schools, colleges, playing fields, densely populated areas, and heritage sites.

Israel: Minimum setback of 100 meters for cell towers near schools and homes.

Chile: Cell antennas are not allowed in “sensitive areas” such as kindergartens, hospitals, and nursing homes.

Queensland, Australia: New cell towers prohibited on school property, with a 200-meter setback and emissions capped at no more than 1% of federal guidelines.

New Zealand: Cell towers prohibited on school property and 50 meter setback from schools.

Toronto, Canada: A "Prudent Avoidance Policy" recommends keeping RF exposures at least 100 times below Health Canada’s guidelines.

Click on country or policy for hyperlink to source.

Wireless and EMF Program
Environmental Health Sciences

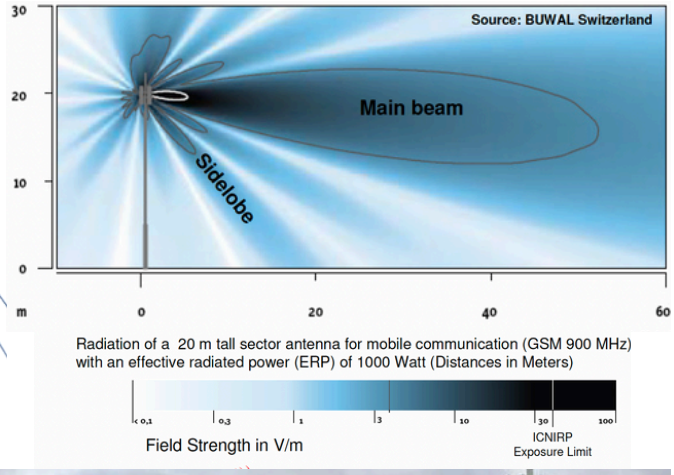
RESEARCH
Science and Policy
BRIEF

HIGHER RF RADIATION IN CLOSE PROXIMITY TO CELL ANTENNAS

The 2022 study "**Measurements of radiofrequency electromagnetic fields, including 5G, in the city of Columbia, South Carolina, USA"** published in *World Academy of Sciences Journal* by Tarmo Koppel and Lennart Hardell, MD of the Environment and Cancer Research Foundation found the highest RF exposure readings were registered close to cell phone base station antennas.

Image: Hardell and Koppel (2022) Figure 7 - Gervais Street "Cell phone base station antenna placed close to street level and causing high exposure to pedestrians and nearby café visitors (exposure scenario illustration)."

RADIATION PATTERN OF A SECTOR CELL ANTENNA



SCIENTIFIC RESEARCH

Evidence for a health risk by RF on humans living around mobile phone base stations: From radiofrequency sickness to cancer by Balmori in Environ Research (2022)

Scientific evidence invalidates health assumptions underlying the FCC and ICNIRP exposure limit determinations for radiofrequency radiation: implications for 5G by the International Commission on the Biological Effects of Electromagnetic Fields. *Environmental Health (*2022).

Development of health-based exposure limits for radiofrequency radiation from wireless devices using a benchmark dose approach by Uche and Naidenko. *Environmental Health* (2021).

The roles of intensity, exposure duration, and modulation on the biological effects of radiofrequency radiation and exposure guidelines by Lai & Levitt, *Electromagnetic Biology and Medicine,* (2022).

Wireless technology is an environmental stressor requiring new understanding and approaches in health care by McCredden et al. Frontiers in Public Health (2022).

Wireless technologies, non-ionizing electromagnetic fields and children: Identifying and reducing health risks by Davis et al. Current Problems in Pediatric and Adolescent Health Care (2023).

REFERENCES COUNTRY LIMITS

Electromagnetic radiation safety: Russian national and international regulatory frameworks for radiofrequency electromagnetic fields by Grigoriev et al. *Public Health and Life Environment* (2020).

International policy and advisory response regarding children's exposure to radio frequency electromagnetic fields (RF-EMF) by Redmayne. *Electromagnetic Biology and Medicine* (2016).

Human radio frequency exposure limits: An update of reference levels in Europe, USA, Canada, China, Japan and Korea by Madjar. *International Symposium on Electromagnetic Compatibility* (2016).

Personal exposure to radiofrequency electromagnetic fields: A comparative analysis of international, national, and regional guidelines by Ramirez-Vazquez et al. *Environmental Research (*2024).

Legislative Decree 24 March 2024, n. 48. *Official Gazette of the Italian Republic* (2024).

Comparison of international policies on electromagnetic fields (power frequency and radiofrequency fields by Stam. National Institute for Public Health and the Environment, the Netherlands (2018).

U.S. FCC Limits for Maximum Permissible Exposure (MPE): 47 CFR 1.1310, Radiofrequency radiation exposure limits. National Archives (2025).

Click on the research paper to hyperlink to the source.