

Protecting Health and Safety

The health and safety of consumers is the wireless industry's first priority. Here's what you should know about radiofrequency (RF) energy and wireless devices.

Read what the experts say:

- World Health Organization
- American Cancer Society
- National Institutes of Health – National Cancer Institute
- Federal Communications Commission (FCC)
- Food and Drug Administration

What is RF Energy?

Many devices we use every day—baby monitors, Wi-Fi routers, and garage door openers—transmit information using radio waves. These radio waves emit energy commonly referred to as RF energy.

Experts agree that wireless devices have not been shown to pose a public health risk.

Overwhelming scientific evidence shows no known health risk to humans from RF energy emitted by wireless devices, including smartphones. This evidence includes numerous, independent analyses of peer-reviewed studies conducted over several decades by national and international organizations.

Federal government statistics show the number of brain tumors has remained unchanged since mobile phones were widely introduced in the 1980s while the number of mobile phones and sites has increased significantly, by a factor of 325 and 140, respectively.

Cellular equipment operates within safety limits.

RF energy from antennas used in cellular transmissions, including 5G small cells, result in exposure levels below FCC safety limits. These limits are based on recommendations from the scientific community and expert non-government organizations. The widely accepted scientific consensus is that towers, small cells, antennas, and other cellular infrastructure pose no known hazard to nearby residents—and as the FCC notes, “the possibility that a member of the general public could be exposed to RF levels in excess of the FCC guidelines is extremely remote.”

FCC regulations protect health and safety.

All wireless devices sold in the U.S. must go through a rigorous approval process to ensure they meet the science-based guidelines set by the FCC. These guidelines—based on internationally-recognized scientific organizations—set limits for the maximum amount of RF exposure from wireless devices and include a significant margin of safety (Christopher C. Davis Testimony, 2018). Wireless devices and antennas operate well under FCC thresholds (Christopher C. Davis Testimony, 2018).

5G and safety

The scientific consensus is that there are no known health risks from all forms of RF energy at the low levels approved for everyday consumer use. The FCC regulates RF emissions, including millimeter waves from 5G devices and equipment. In December 2019, the FCC adopted the recommendations of expert organizations that have reviewed the science, including from the IEEE, and reaffirmed—on a unanimous and bipartisan basis—that its safety standards “ensure the health and safety of workers and consumers of wireless technology,” and that “no scientific evidence establishes a causal link between wireless device use and cancer or other illnesses.”

Typical exposure to 5G devices—such as small cells attached to phone poles or the sides of buildings—is far below the permissible levels and comparable to Bluetooth devices and baby monitors. The FCC continues to monitor the science to ensure that its regulations protect public health.

Expert voices

“Based on our ongoing evaluation of this issue and taking into account all available scientific evidence we have received, **we have not found sufficient evidence that there are adverse health effects** in humans caused by exposures at or under the current radiofrequency energy exposure limits. Even with frequent daily use by the vast majority of adults, we have not seen an increase in events like brain tumors.”

– Director of the FDA’s Center for Devices and Radiological Health (2018)

“[T]he RF waves given off by **cell phones don’t have enough energy to damage DNA directly or to heat body tissues**. Because of this, it’s not clear how cell phones might be able to cause cancer.”

– American Cancer Society (2018)

“We have relied on decades of research and hundreds of studies to have the most complete evaluation of radiofrequency energy exposure. This information has informed the FDA’s assessment of this important public health issue, and given us the confidence that the **current safety limits for cell phone radiofrequency energy exposure remain acceptable for protecting the public health**. ...

[T]he totality of the available scientific evidence continues to not support adverse health effects in humans caused by exposures at or under the current radiofrequency energy exposure limits.”

– Director of the FDA’s Center for Devices and Radiological Health (2018)

More information is available at [wirelesshealthfacts.com](https://www.wirelesshealthfacts.com).

Agencies and organizations that shape U.S. regulations:

- Institute of Electrical and Electronics Engineers (IEEE)
- National Council on Radiation Protection and Measurements
- International Commission on Nonionizing Radiation Protection



...there is no evidence to support that adverse health effects in humans are caused by exposures at, under, or even in some cases above, the current RF limits. Indeed, no scientific evidence establishes a causal link between wireless device use and cancer or other illnesses.”

—FCC Order reaffirming existing safety standards, Dec 2019