

# Protecting Health and Safety

The health and safety of consumers is a top priority for the wireless industry. 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.

The weight of 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 have decreased 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 well 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)

## New 5G networks emit less RF energy.

Next-generation 5G devices operate on millimeter wave spectrum which, after decades of studies, is subject to the same FCC regulatory regime described above. (Letter from Dr. Kenneth R. Foster to Shreveport City Council, April 28, 2018) Because of the nature of millimeter wave spectrum, 5G devices operate at the same or lower RF levels than today's 4G networks. (Andrew H. Thatcher, Common Radiofrequency Emissions, 2016)

Typical exposure to 5G infrastructure—such as small cells attached to phone poles or the sides of buildings—is comparable to Bluetooth devices and baby monitors. (Christopher C. Davis, Typical Far-Field RF Exposures Compared to FCC Maximum (MPE), 2018) Any hazards “would require exposure to RF energy at levels far above anything that would be possible with ordinary cellular telephone equipment.” (Foster letter, 2018)

## 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 [cellphonehealthfacts.com](http://cellphonehealthfacts.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