

Radio waves, public health and wireless sites

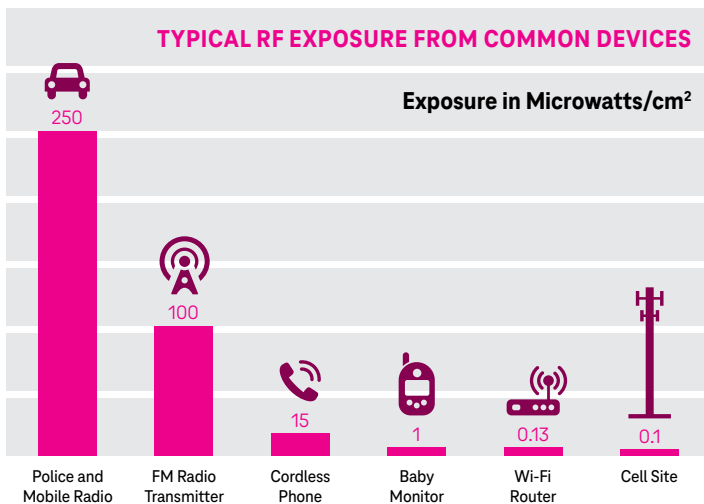


How radio waves work

Radio waves are created by harnessing naturally occurring electromagnetic fields. All wireless communications travel via different bands of radio waves—also referred to as radio frequencies (RF) or spectrum.

A part of American history

Radio frequency (RF) is the same technology that has been used for radio broadcasts since the late 1800s. While RF lets us send and receive voice, text, photos, and videos with our phones, it's also used by home electronics like baby monitors, cordless phones, and video game controllers.



Radio waves and public safety

RF technology helps keep our communities safer by supporting essential public safety services, such as 911 service, emergency and first responders, AMBER and Silver alerts, and communications during natural disasters.



Quick fact:

Although the FCC permits an effective radiated power (ERP) of up to 500 watts per channel **the majority of cellular or PCS cell sites in urban and suburban areas operate at an ERP of 100 watts per channel or less.**¹

Wireless antennas operate at low power levels — and on an intermittent basis. According to the FCC:

“Other antennas, such as those used for radio and television broadcast transmissions, use power levels that are generally much higher than those used for cellular and PCS antennas.”

“These safety limits were adopted by the FCC based on the recommendations of expert organizations and endorsed by agencies of the Federal Government responsible for health and safety. Therefore, there is no reason to believe that such towers could constitute a potential health hazard to nearby residents or students.”²

Below the exposure level

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.**³

<10 watts

In urban areas, cell sites commonly emit an effective radiated power of **10 watts per channel or less. The FCC allows up to 500 watts per channel.**³

Rapid decrease

The power density from the antenna decreases rapidly as one moves away from the antenna.³

What leading organizations say:

AMERICAN CANCER SOCIETY⁴

“Public exposure to radio waves from cell phone tower antennas is slight for several reasons. The power levels are relatively low, the antennas are mounted high above ground level, and the signals are transmitted intermittently, rather than constantly.”

THE WORLD HEALTH ORGANIZATION⁵

“Studies to date provide no indication that environmental exposure to RF fields, such as from base stations, increases the risk.”

U.S. FOOD & DRUG ADMINISTRATION⁶

“The weight of scientific evidence has not linked cell phones with any health problems.”

¹ <https://www.fcc.gov/consumers/guides/human-exposure-radio-frequency-fields-guidelines-cellular-and-pcs-sites>

² transition.fcc.gov/oet/rfsafety/rf-faqs.html

³ <https://www.fcc.gov/consumers/guides/human-exposure-radio-frequency-fields-guidelines-cellular-and-pcs-sites>

⁴ www.cancer.org/cancer/cancercauses/othercarcinogens/at-home/cellular-phone-towers

⁵ www.who.int/features/qa/30/en/

⁶ <https://bit.ly/2MajvIO>

⁷ www.nena.org/?page=911Statistics

⁸ <https://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless202205.pdf>

911 WIRELESS SERVICES

240 million calls are made to 911 in the U.S. each year.⁷



More than 80% of ALL emergency 911 calls are made on wireless devices.⁷

MAJORITY OF U.S. HOUSEHOLDS ARE WIRELESS-ONLY

The majority of U.S. homes (68.7%) rely on cellphones alone for a telephone connection. Adults living in poverty are much more likely to live in wireless-only households, making a cell connection the only way they can call for help or receive emergency alerts.⁸



79.1% of all children, under age 18, live in households with only wireless telephones.