

Top 10 Facts About Cell Phones and Wi-Fi

By [Environmental Health Trust](#)

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1. All Cell Phones And Wireless Devices Emit Radiation.

Every wireless device is actually a two-way microwave radio that sends and receives a type of non-ionizing electromagnetic radiation called radio frequency radiation RF – EMF. This machine-made radiation is millions of times higher than the natural electromagnetic fields (EMFs) our grandparents were exposed to. Numerous peer reviewed [published research](#) studies shows that these made-made pulsed electromagnetic frequencies cause adverse biological effects and are very different than the natural electromagnetic fields that have existed in the environment for years. Research on humans has found an association between cell phone use and serious effects such as [brain cancer](#), [headaches](#), damage to the [brain](#) and [immune system](#). Yale [studies](#) found that cellular radiation exposure during pregnancy led to increased hyperactivity and memory problems in offspring.

2. Our Brains And Bodies Are Penetrated By This Radiation.

When we hold a cell phone against our head to talk, the radiation from the phone moves into our brain. Likewise, when we use a wireless laptop, the radiation penetrates into our abdominal region, chest area and brain. According to the International Agency for the Research on Cancer:

“the average radio frequency radiation energy deposition for children exposed to mobile phone RF is two times higher in the brain and 10 times higher in the bone marrow of the skull, compared with mobile phone use by adults”.

(Read it on page 44 of the [IARC Monograph on Radiofrequency Fields](#))

Multiple research studies report cell phone radiation penetrates more deeply into children’s brains ([Fernandez-Rodriguez 2015](#) , [Fernández 2015](#), [Mohammed 2017](#)) in comparison to adults.

Research also has found that radiation from [tablets](#) penetrates more deeply into children’s brains ([Ferreira 2015.](#)) A [2018 study](#) that considered the radiation dose into the brain of teenagers found that teens who used cell phones *up to their head* had decreased memory performance on researchers tests.

3. Cell Phones And Wireless Devices Emit Radiation Constantly, Even When You Are Not Talking Or Using The Phone.

A powered on cell phone is always “checking in” and maintaining a connection to the nearest cell tower by [sends](#) intense bursts of radiation several times per second. Likewise, a wireless-enabled laptop, tablet or other device is always “checking in” with the nearby router or a network base. These “check ins” are radiation emissions—happening several times per second, and whether or not a connection is successfully established. Medical doctors have written many [letters to schools](#) calling for administrators to reduce exposures to this radiation in schools. Harvard doctors have published [research](#) linking electromagnetic fields to autism.

4. Every Wireless Device Has Fine Print Instructions Buried In Its User Manual That Specify A Distance Between The Device And User That Should Not Be Surpassed.

For example, most cell phone manuals state the phone should be held at specified distance (often around 5/8th of an inch) from the body. If you look in the user manual for your DECT cordless home phone, wireless laptop or printer, it will state that the device should be at least 20 cm (approximately 8 inches) away from the body to prevent “exceeding FCC radiation exposure limits”. These instructions are in the user manuals because cell phones and wireless devices are tested for user radiation exposures at those specific distances.

In other words, if you are using a laptop on your lap, you are exposing yourself to untested radiation emissions that could exceed the radiation levels our government regulations presently allow. When you use a device closer than the manufacturer’s distance instructions, you risk exposing yourself to radiation levels that our federal government understands can cause sterility, brain damage and tissue damage. [Learn more about the fine print warnings on various devices here.](#)

5. These Fine Print Instructions DO NOT Protect You From All Health Effects.

The instructions buried in your manual are not safe enough. Even if you follow these instructions, you risk your health. Note: radiation exposure at the specified distances is much higher than zero. Accumulating [research](#) now shows a myriad of health effects occur at levels far far below (literally tens of thousands times lower than) government regulation limits. Wireless devices were not adequately tested before they came on the market.

6. Research Shows Low Levels Of This Radiation Impact The Brain And Reproductive System.

Wireless radiation has been shown to change brain function even at levels hundreds of thousands of times below federal guidelines. In 2011, Dr. Volkow’s [NIH research](#) showed that the brain increased glucose metabolism when exposed to cell phone radiation. Dr. Suleyman Kaplan has published [multiple research studies](#) showing damaged brain development in the offspring of prenatally exposed test subjects. [Significant research](#) shows that wireless exposures decrease and damage sperm and that prenatal exposure can alter testis and ovarian development. These are just a few examples from a large body of accumulated science which shows effects from cell phone and wireless radiation.

7. Radiation Emitted By Cell Phones And Wireless Is Officially Linked To Cancer.

In 2011, the World Health Organization's International Agency for Research on Cancer first classified cell phone and wireless radiation as a "class 2 B Possible Human Carcinogen" based on these research studies that showed long-term users of cell phones had higher rates of brain cancer on the side of the head where they held the phone. The United States National Toxicology Program completed a \$30M study that found "clear evidence" of cancer in male rats exposed to long term low level radio-frequency radiation. Due to these findings, several scientists have [published](#) that the weight of current peer reviewed evidence supports the conclusion that radiofrequency radiation should be regarded as a human carcinogen.

8. As The Evidence Linking Wireless Radiation To Cancer Has Significantly Increased Since 2011, Now Scientists State That Cell Phone Wireless Radiation Is A Human Carcinogen.

In 2016, a major US government study found cell phone radiation caused increased cancers (brain and heart nerve) in rats exposed at low levels for two years. The results were stunning because the cancers the rats developed are the same type humans are developing after long term cell phone use.

Furthermore, since 2011, new research studies have been published linking wireless radiation to cancer. CERENAT (a case control national study in France) again showed a statistically significant association between glioma (brain cancer) and long-term cell phone use. Another [study out of Jacobs University](#) (which replicated previous study results) showed that RF acted as a tumor promoter. The study details in its conclusion how, "Numbers of tumors of the lungs and livers in exposed animals were significantly higher than in sham-exposed controls. In addition, lymphomas were also found to be significantly elevated by exposure."

In light of this published science, several World Health Organization experts are stating that the evidence has now substantially increased. Dr. Anthony B. Miller has [testified](#) on the increased evidence, and he and colleagues have written several published papers detailing their opinion and in 2018 he was lead author on a published literature [review](#) concluding that cell phone wireless radiation is a human carcinogen. Scientists from Israel researching cancer in radar operators also concluded that the evidence indicates radiofrequency can cause cancer ([Peleg 2018](#).) Dr. Hardell and colleagues have long published papers [concluding](#) that that wireless "should be regarded as human carcinogen requiring urgent revision of current exposure guidelines."

9. Solutions Exist: Hundreds Of Scientists Worldwide Recommend Taking Action To Reduce Exposures To Wireless Devices Because Of The Serious Health Effects From These Devices.

In 2015, a large group of scientists and medical doctors signed onto a formal Appeal to the United Nations and the World Health Organization, calling on them to take immediate action on this issue. This Appeal is now signed by over 250 experts and is [published](#) in the International Journal of Oncology. In 2014, a group of U.S. physicians, including the Chief of

Obstetrics at Yale Medicine, presented scientific studies at the launch of the [BabySafe Project](#), issuing specific recommendations to pregnant women on how to decrease wireless exposures in order to decrease risks to babies' brain development. We do not have to give up our technology but we can make smarter choices about the way we use it. Every person can easily decrease exposure to this radiation by making [simple changes](#) every day.

10. Government Regulations Are Outdated And Antiquated.

In the United States, the last review for radio frequency limits was in 1996, and the reality is that these limits are based on research from the 1980s. Many countries are using guidelines developed by the IEEE or ICNIRP—guidelines that have remained unchanged for decades. Those guidelines do not consider the more current science showing harm. Thankfully other countries - [over twenty countries](#)- are enacting protections to reduce public exposure to this radiation and have radiation limits far lower than the FCC and ICNIRP. Some have [banned](#) Wi-Fi in classrooms, other have banned cell phones made for young children and others have cell tower limits 100x lower than ICNIRP. Regulations are antiquated because they have not kept pace with the manner in which consumers use devices—usage has changed considerably since 1996. For example, the regulations only consider one radiating device at a time and do not account for a residence, classroom, or workplace, healthcare, retail, recreational and other venues filled with multiple devices. The regulations do not consider that people carry their cell phones tightly in a front pocket of jeans or in a bra. They do not consider that laptops would be placed on laps by schoolchildren in the classroom. Regulations did not consider research that looked at long-term exposures to vulnerable groups such as children, pregnant women or to medically compromised individuals. Guidelines were set by only considering the impact to a full-grown man. Many [scientists](#) and [major medical organizations](#) have written about the inadequacy of these outdated guidelines.

Final Bonus Fact: No Safe Level Of This Radiation Has Been Identified.

Scientific studies have not been done to develop a “safe level” of exposure. The latest science clearly shows that biological effects could occur at non-thermal (non-heating) levels. Science also shows that children and the developing pregnancy are far more vulnerable to these damaging effects. The Food and Drug Administration (FDA) and Environmental Protection Agency (EPA) did not do the research necessary to define a safe level that the public can be exposed to without harmful effects.

In a [2015 study](#) (replicating [prior scientific findings](#) linking RF to cancer promotion), the researchers state, “Since many of the tumor-promoting effects in our study were seen at low to moderate exposure levels (0.04 and 0.4 W/kg SAR), thus well below exposure limits for the users of mobile phones, further studies are warranted to investigate the underlying mechanisms.” and “We hypothesize that these tumor-promoting effects may be caused by metabolic changes due to exposure. Our findings may help to understand the repeatedly reported increased incidences of brain tumors in heavy users of mobile phones.”

No medical organization has determined a “safe level” of this radiation for long-term exposure to children. In fact, [medical organizations](#) worldwide - including the American Academy of Pediatrics, the largest group of children's doctors in the United States and the [Athens Medical Association](#) and [Vienna Medical Association](#) - are calling for eliminating and

reducing radiofrequency cell phone wireless radiation exposures.

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