

How to Read: “A Comparison of WiFi Emissions to Scientific Research”

This chart compares the radiation levels that are emitted from various wireless devices to peer reviewed studies. It shows that wireless devices emit levels of radiation that are as high or higher than the levels found in studies to cause biological and health effects.

This chart is in microwatts per square meter, or $\mu\text{W}/\text{m}^2$, which is a commonly used unit of measurement in scientific research.

The chart shows the effects of various studies on RF radiofrequency microwave radiation, from such sources such as cell towers, cell phones, WiFi, radar, radio transmissions towers, and other sources. Note that the frequencies in these studies are not limited to WiFi, which is 2.45 GHz. Research has found that the biological and health effects are found across the board through the RF radiofrequency range. Remember this is microwave radiation, and it is every bit as harmful as it sounds. There are several thousand peer reviewed papers reporting biological and health effects from high frequency RF radiofrequency microwave radiation.

Duration of exposure for these studies varies. The studies with the greatest duration of exposure will be cell tower studies, which may investigate the consequences of a 1-5 year period of radiation exposure.

This chart also compares to the FCC guidelines, which are the only U.S. federally-mandated governmental regulations for wireless RF radiofrequency microwave radiation. In most other countries ICNIRP international guidelines similarly apply.

To start, if you look at the top, you'll see the number 10,000,000 (10 million). This is the maximum amount of radiation that the FCC considers safe. They say that everything under 10 million is fine.

Then if you look at all of these various numbers going down the list, you'll see all these effects that have been reported by peer reviewed studies at much lower levels.

For example, at 20,000 units double strand DNA damage was reported.

At 3,500 units pathological leakage of the blood brain barrier was reported.

And at 1,700 units irreversible infertility in mice was found after 5 generations.

Notice that these levels are lower than iPads or WiFi laptops which emit 90,000 or more.

One of the highest radiating household devices is the DECT style cordless phone. Unlike older cordless phones, newer style DECT phones emit radiation 24/7, non-stop. The levels 10 feet from a DECT phone can be 1,000 or higher.

There are many other effects that have been reported at lower levels than this. Many of the effects from 500 on down are from cell tower studies, which found substantially increased risk of cancer and other neurological issues for populations within ¼ mile of a cell or radio tower.

Fatigue, headaches, joint pain, concentration problems, sleeping problems, these have all been reported at levels that would be 20 or more feet from a WiFi router or DECT phone.

Recognize that this chart compares to background levels, which are in today's world about $0.001 \mu\text{W}/\text{m}^2$

0.001 is one thousand times lower than 1 . Therefore, the lowest entry on the chart, $3 \mu\text{W}/\text{m}^2$, which is the level at which a study from 2006 found decreased sperm count, is 3,000 times higher than today's background levels. $3 \mu\text{W}/\text{m}^2$ is about the same level as one would find 50 feet from a WiFi router.

The FCC maintains that levels less than 10 billion are ok, because they only consider one type of biological effect: the heating of our bodily tissue.

The FCC ignores all scientific research that shows effects at much lower levels, despite the fact that there now are 1,000's of peer-reviewed studies from all over the world showing that non-thermal effects do exist. The last time the FCC reviewed the scientific literature was in 1986. Many organizations including the American Academy of Pediatrics are calling on the FCC to revisit their guidelines.

Don't hold your breath, as the biggest wireless industry lobbyist of all time has been chosen to be the new FCC chief. This individual was alleged to have suppressed and biased the research from the nation's largest mobile phone research project to cover up adverse health effects due to cell phone radiation. Based on his past behavior, it would be likely that Wheeler will advocate for looser regulations, which in turn will expose residents to even more radiation.

The bottom line is that it is highly recommended that you replace wireless devices with cords, including corded Ethernet connections for computers, corded phones, etc. It may take awhile to get used to cords again, but it's well worth it, given the health risks from using wireless.