

The following article was submitted in response to recently published articles questioning the safety of electromagnetic radiation (EMR) from wireless devices. Ashland Local Town Pages welcomes dialogue on a topic of importance to Ashland.

## Should Wireless Be Demonized?

By CHRISTOPHER TAYLOR,  
CONTRIBUTING WRITER

Concerning the recent stories in *Ashland Local Town Pages*, Vol. 3 No. 3, October 2015, about the evils of wireless devices, rather than worry about the very unlikely risks of radio frequency (RF) exposure from consumer electronics, I submit that the Ashland public would be better served by news stories about known problems in the town such as opioid addiction, the deaths of teenagers driving while intoxicated or texting, high property taxes, traffic congestion and housing.

The ICNIRP is the International Nonionizing Radiation Protection Commission, an independent group of experts responsible for evaluating the effects of nonionizing radiation such as that emitted by cars, electric household wiring, computers, cell phones, Wi-Fi devices, Bluetooth headsets and wireless smart meters. According to the ICNIRP, as published in a recent article in *IEEE Microwave Magazine*, "Scientific literature published to date does not furnish any compelling data showing adverse effects [from consumer wireless equipment] below the basic restrictions." The World Health Organization (WHO) has come to the same conclusion and has a similar statement on its web site. Another respected organization, The National Research Council (NRC), reviewed more than 500 scientific studies that have been conducted over a 20-year period and found "no conclusive and consistent evidence" that electromagnetic fields [from consumer devices] harm humans.

The "basic restrictions" in the US refer to limits imposed by the Federal Communication Commission (FCC), which tests



and measures the SAR (specific absorption rates) of nonionizing radiation from all wireless devices before permitting them to be sold and used in the US. Absorption of RF waves by the human body depends on exposure intensity, which falls off as the square of the distance from the source, and on the RF. The only proven physical mechanism for damage to the human body is heating, and the SAR limits are based on the finding that about 4 watts of RF per kilogram of body weight have to be absorbed to raise the temperature of the human body one degree Celsius (1.8 degree F), equivalent to about 280 watts absorbed for a 145-pound person. This is quite a high exposure that would be difficult if not impossible to reach in practical terms, but one could easily raise his or her body temperature this much by jogging for a few minutes. The FCC sets the SAR limit for the 10 MHz to 10 GHz frequency range used by consumer devices to 0.08 watts per kilogram of body weight, two percent of the 4 W/kg benchmark for a one degree C temperature rise. This is a very low level of exposure

not known to cause any measurable effects at all.

Subtle cellular mechanisms that could potentially lead to health problems from consumer wireless devices have been proposed and some experimental results shown, but these mechanisms have not been proven, or the experimental results have not stood up to confirmation. In no cases have double-blind tests proven any relationship between consumer RF exposure and health, and to suggest otherwise is to ignore or simply not understand the science. The "wireless experts" and the "peer reviewed research" quoted in the news article have so far not withstood the peer review process!

As new RF devices reach the market, as new research such as epidemiological studies appear, and as measurement and computational predictive techniques for in vivo absorption and temperature estimation improve, the ICNIRP and other safety organizations constantly review their guidelines for RF, so the book may not be entirely closed on the question of wireless safety, but for now, the public need not worry.

Don't take my word for it. Read about all of the scientific studies—not just the pseudo-science, quackery and hysteria demonizing wireless—here: <http://skepdic.com/electrosensitives.html>.

And, you can read about the FCC's testing of wireless devices and what it means here: [www.fcc.gov/guides/specific-absorption-rate-sar-cell-phones-what-it-means-you](http://www.fcc.gov/guides/specific-absorption-rate-sar-cell-phones-what-it-means-you).

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## Putting Safety at the Forefront this Holiday Season

Dear Editor,

Thank you for publishing Adam Elbirt's article, "The Truth About Wireless Device Safety," in the November issue of *Ashland Local Town Pages*. I am pleased to see others joining this important conversation.

Mr. Elbirt's comments are not unusual for someone who has built his career in the telecommunications industry. Unfortunately, the premise upon which Mr. Elbirt bases his information is no longer valid. He indicates, "The main effect of radio-frequency (RF) electromagnetic fields is heating of body tissue."

This is referred to as the thermal effect. The Federal Communications Commission (FCC) standards to which telecommunication companies adhere were set in 1996, and the only testing done was for heat exposure from a single source of radiation on a six-foot, 220-pound military mannequin. Current science now indicates you don't have to heat the tissue cause damage. Harm is being done at the much lower non-ionizing, non-thermal levels.

None of the devices we use today have been pre-market safety tested, not even for children, fetuses, senior citizens or those with known health conditions. Nor have they been tested in a setting like a home, school or public place where we now have multitudes of devices emitting unshielded radiation at once.

Our world scientists and doctors are asking for change. The American Academy of Pediatrics, representing 60,000 pediatricians, in December 2012 urged Congress to protect children from the dangers of Wi-Fi. They wrote, "It is essential that

any new standards for cell phones or other wireless devices be based on protecting the youngest and most vulnerable populations to ensure they are safeguarded through their lifetimes." The FCC put their guidelines under review shortly after the BioInitiative Report ([www.bioinitiative.org](http://www.bioinitiative.org)) was released in 2013, but as with cigarettes and asbestos, it could take our government decades to protect public health.

In May 2015, Dr. Martin Blank, Ph.D., of Columbia University's Department of Physiology and Cellular Biophysics, representing 190 leading scientists worldwide, submitted an international appeal to the United Nations and the World Health Organization calling for protection from non-ionizing electromagnetic field exposure ([www.emfscientist.org/index.php/emf-scientist-appeal](http://www.emfscientist.org/index.php/emf-scientist-appeal)).

The appeal states, "We are scientists engaged in the study of biological and health effects of non-ionizing electromagnetic fields (EMF). Based upon peer-reviewed, published research, we have serious concerns regarding the ubiquitous and increasing exposure to EMF generated by electric and wireless devices. These include—but are not limited to—radiofrequency radiation (RFR) emitting devices, such as cellular and cordless phones and their base stations, Wi-Fi, broadcast antennas, smart meters, and baby monitors as well as electric devices and infra-structures used in the delivery of electricity that generate extremely-low frequency electromagnetic field (ELF EMF)."

The appeal goes on to say, "Numerous recent scientific publications have shown that EMF affects living organisms at levels well below most international and national guidelines. Effects include increased cancer risk, cellular stress, increase in harmful free radicals, genetic damages, structural and functional changes of the reproductive system, learning and memory deficits, neurological disorders, and negative impacts on general

**SAFETY AT FOREFRONT**

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