

## EMF Points of Confusion vs. Fact

Many are surprised to learn the **electromagnetic fields (EMFs)** emitted by wireless technology are biologically hazardous, and one often gets push-back when they open the conversation. This fact sheet provides information to help sort fact from misinformation and identifies solutions for safer technology use. For those reading this in print format, please see <https://sites.google.com/site/understandingemfs/ma-emf-bills> for an electronic copy to access the links below.

| Point of Confusion   | FACT   |
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| The FCC says wi-fi is fine.  | FCC guidelines are outdated. The <a href="#">U.S. Government Accountability Office</a> in 2012 instructed the FCC to bring their public radiation exposure limits in line with <a href="#">current science</a> . <a href="#">Hundreds</a> of formal comments were submitted to the FCC by EMF scientists, doctors and the <a href="#">American Academy of Pediatrics</a> . The FCC has failed to respond and continues to promote wireless technology. See Harvard's <a href="#">Captured Agency: How the Federal Communications Commission is Dominated by the Industries it Presumably Regulates</a> . They appear to be using the tobacco industry playbook. See also the <a href="#">Mobile Communications and Health</a> study by T-Mobile. |
| The manufacturers make it look like all wi-fi all the time is the way to go. | Most consumers, and even many who work in the industry, are unaware of the manufacturers' <a href="#">fine print</a> that comes with each device indicating one should never keep an active device on one's body or radiation exposure may exceed even the FCC's outdated non-protective guidelines. Additionally, science indicates we should have invoked the <a href="#">Precautionary Principle</a> decades ago when evidence of harm was first found, and not exposed the public until proven safe. We have not done this in the U.S. but <a href="#">other countries</a> have. This <a href="#">table</a> illustrates the disparity in allowable public radiation exposure levels.   |
| There are studies showing no evidence of harm.                               | No evidence of harm is not the same as safe. This technology was brought to market with no safety testing and a safe level of microwave radiation has never been identified. The telecommunications industry produces its own scientific studies designed to show no evidence of harm. This creates doubt among consumers so they will continue to purchase wireless products. Dr. Henry Lai provides insights <a href="#">here</a> . In 2018 the <a href="#">U.S. National Institutes of Health</a> found clear evidence of cancer, as did a large <a href="#">Italian study</a> at the Ramazzini Institute.  |
| There are not many studies done on wi-fi.                                    | There didn't used to be, but there are now. See this 2018 <a href="#">meta-study on Wi-Fi</a> by Dr. Martin Pall. Cell phones came first so that is why the majority of studies, which can take years to complete, use cell phones. However, all wireless operates in the biologically hazardous microwave segment of <a href="#">the electromagnetic radiation spectrum</a> . So, what cell phone studies reveal holds true for 2G, 3G, 4G, 5G, wi-Fi and the Internet of Things too. We have <a href="#">thousands of studies</a> showing man-made EMFs are hazardous to all biological species-- humans, plants, animals, and insects -- including the <a href="#">pollinators</a> needed to grow our food.                                   |

| Point of Confusion   | FACT  |
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| Surely we would know if this were an issue.                  | Advertising dollars influence media content, and telecommunications, energy and technology companies are among <a href="#">the top advertisers</a> . Media executives will not allow true investigative journalism into this issue or their revenues will drop so we rarely hear of wi-fi harm in mainstream media. When there is coverage, they typically say more research is needed, which appeases industry advertisers and keeps consumers buying their toxic products. Industry influence on public servants can also be a factor. In 2017, it took a lawsuit for the <a href="#">California Department of Public Health</a> to finally release a long-suppressed fact sheet on cell phone radiation.   |
| Our education agencies do not see this as an issue.          | Few agencies have investigated because the industry has been so effective at suppressing evidence of harm while offering financial incentives to adopt EMF products and infrastructure. In our top-down education system, local schools often do not feel empowered to act. However, legal precedents are being set that leave schools, public agencies and companies at risk. The insurance industry has identified EMFs as one of the top emerging hazards. Lloyds of London and other insurers do not cover EMF damages so schools and businesses can be held directly responsible for harm. Workers compensation cases have also been awarded for EMF damages in the workplace, and teachers unions are beginning to request hard-wired work environments. Click <a href="#">here</a> for additional information. <a href="#">Ashland Public Schools, MA</a> has become the first in the nation to adopt Best Practices for Mobile Devices and <a href="#">Maryland</a> is the first state to recommend hard-wiring in schools with wi-fi off.  |
| We need wireless for the 21 <sup>st</sup> century classroom. | The industry identified children as an untapped market and began their 21 <sup>st</sup> Century Classroom campaign to put a wireless device in the hands of every child. In addition to <a href="#">biological harm from wi-fi</a> , studies are showing <a href="#">excessive screen time</a> is harming neurological brain development. This is causing impaired social and emotional skills, digital addiction and poorer educational outcomes. See the <a href="#">Reykjavik Appeal</a> .   |
| Some say electrosensitivity doesn't exist.                   | The United States Access Board's IEQ Indoor Environmental Quality Project indicates electromagnetic sensitivities may be considered <a href="#">disabilities under the ADA</a> and recommends <a href="#">accommodations</a> . Just as Lyme Disease was dismissed by medical practitioners before it was widely understood, today's doctors, nurses, psychologists and social workers in many countries have yet to be trained to diagnose and treat electrosensitivity (ES). School nursing records often indicate an increase in one or more common symptoms among students and staff following the installation of wireless systems: headaches, tachycardia, bloody noses, ear bleeds, skin rashes, nausea, tinnitus (loud ringing in the ears), vertigo, inability to concentrate, depression, anxiety, insomnia. See also the <a href="#">EUROPAEM EMF Guideline 2016 for the prevention, diagnosis and treatment of EMF-related health problems and illnesses</a> and the <a href="#">Guideline of the Austrian Medical Association for the diagnosis and treatment of EMF related health problems and illnesses (EMF syndrome)</a> . |

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| <p>The radiation drops off with distance.</p>  | <p>This is true, in physics the inverse-square law states the intensity is inversely proportional to the square of the distance from the source of that physical quantity. However, it is the pulsed, spiked, erratic signal that causes biological damage. Many routers and cell antennas send and receive data at long distances, and those erratic pulses, though spread out with distance, hit our bodies as they go through buildings, walls, ceilings, etc. Further, if not stopped, the industry will put cell antennas right in our neighborhoods every 2-12 houses for <a href="#">5G and the Internet of Things</a>. These will pulse close range toxic radiation at our families 24x7.</p>  |
| <p>Respected engineers, physicists, medical professionals and technologists in our community want our children to have wi-fi in schools.</p> | <p>Most professionals were taught in school and in their work that there must be enough heat from a wireless device to raise the temperature of skin tissue in order to cause harm. Non-industry funded science has now proven this thermal effect premise is false. <a href="#">Thousands of studies</a> show biological effects at the non-thermal, non-ionizing level; most recently the <a href="#">U.S. National Toxicology Program</a> study found DNA damage as well as brain and heart tumors. Professionals in all sectors will benefit from updated <a href="#">education on EMFs</a>.</p>   |
| <p>There is nothing we can do, wi-fi is everywhere.</p>  | <p>Leading non-industry funded EMF scientists from around the world have already sent a <a href="#">formal appeal</a> to the World Health Organization and United Nations to address this “emerging public health crisis”. They succinctly outline specific measures to solve this problem, the first of which is to protect children and pregnant women. Until public policy catches up with science and biologically safe technology is brought to market:</p> <ul style="list-style-type: none"> <li>• Use hard-wired connections with antennas turned off (cell, data, Bluetooth, wi-fi, hotspot) to access the internet safely and avoid legal exposure. Hard-wired is not only safer, it is faster, more reliable and more secure than wireless. Use Ethernet cables and <a href="#">adapters</a> to hard-wire routers, laptops, tablets, etc. Clear sleeping areas of EMFs, and never give to or use an active device near a child.</li> <li>• Choose corded baby monitors, gaming devices, entertainment systems; turn off any wi-fi antennas.</li> <li>• Use corded landline phones, they are safer and more reliable, especially during power outages. Avoid DECT cordless phones, they have high EMF emissions. Cell phones can be forwarded to landlines.</li> <li>• Keep analog utility meters, they do not emit the electromagnetic radiation that “smart” meters do.</li> <li>• Work with <a href="#">public servants</a> to keep wireless infrastructure away from where we live, work, learn, play.</li> </ul> <p>The U.S. Collaborative for High Performance Schools provides <a href="#">Low-EMF Best Practices</a> to establish a hard-wired school environment and prohibit use of personal wi-fi devices in school, except during emergencies. See <a href="#">WirelessEducation.org</a>, a non-profit charity that distills the science and medical recommendations into easy-to-learn concepts in affordable 30-minute e-learning courses for families, schools, and workplaces.</p> |