



EMF References, Resources and Further Information

This list of references is by no means complete. There are countless sources of information on this highly complex topic with which one could investigate to better educate themselves. This provides a listing of some of the resources the author used to write the associated white papers. This also does not provide many individual published research papers as there are too many to include and many can be found within the sources listed below.

Education is empowering. It allows one to make better decisions for themselves on their own health and safety, as well as those they influence. The author encourages others to read more about this topic in order to better educate themselves so they can make their own decisions about whether or not “that stuff is woo-woo”.

[Bioinitiative Report 2012](#)

- “A rationale for biologically-based exposure standards for low-intensity electromagnetic radiation.” (Report updated 2014-2022).
 - [A group of over 30 internationally recognized physicians, scientists, and researchers](#), who are all experts in their prospective fields, who collaborated on an extensive report on the effects of exposure and setting better standards.
 - [“There is more evidence than we need.”](#)
 - “Sometimes, science does not keep pace with new environmental exposures that are by-products of useful things we want to buy and use in society. So, the deployment runs ahead of knowledge of health risks. It is an old story. This is the case for EMF and RFR, and this Report underscores the critical need to face difficult questions, make mid-course corrections, and try to repair the damage already done in this generation, and to think about protecting future generations.”

[Environmental Health Trust—Science to Protect Health & Environment](#)

- “A scientific think tank with a mission to safeguard human health and the environment by empowering people with state-of-the-art information.”
- A website with a tremendous amount of information, resources, research and public policy links, international joint committee actions on EMFs and 5G.
- They are actively involved in a number of different changes in policies both nationally and internationally to help make the public more aware of the risks as well as trying to create better transparency and supervision of regulations from non-industry professionals.
- They provide a detailed amount of information on [“Simple steps to reduce everyday wireless exposures”](#) which is very helpful and easy to follow and implement.

[EMF Analysis](#)

- This highly informative website is hosted by Jeromy Johnson who has a master's degree in engineering who suffered significant health effects as a result of working and living in Silicon Valley in a high EMF-ridden environment. This website covers a multitude of topics, provides a lot of information and clarifications, as well as provides consulting options and referrals to highly respected certified home EMF consultants.
 - [You can find out more about his background here.](#)
 - [His TEDx talk in Berkeley can be found here](#)

[Oceania Radiofrequency Scientific Advisory Association \(ORSAA\)](#)

- "A not-for-profit organization composed of scientists and professionals from various academic disciplines who are investigating the scientific research that relates to the effect of artificial electromagnetic radiation (EMR) on humans, animals, and the environment."
- This powerful document is a must read and is titled "[ORSAA Communication: 10 things you need to know about wireless radiation](#)" is a heavily referenced white paper which provides very helpful, informative and a significant amount of information on the questionable nature of the self-appointed regulatory commissions who make decisions for the industry.

[Physicians for Safe Technology](#)

- A nonprofit group of dedicated physicians and health professionals dedicated to:
 - "Provide trusted leadership in promoting healthy and safe environments through safer use of technology at home, in schools, in the workplace, in healthcare settings and in communities."
 - "Prevent acute and chronic diseases by encouraging understanding of the connection between the public, psychosocial and environmental health effects of using modern technology."
- A significant amount of information can be found on the health effects from EMF radiation to the brain and body with links, articles, references, etc.
- This organization has produced a document titled: "[Safety Tips for Wireless Devices](#)"

[Safer EMR](#)

- Website hosted by Joel Moskowitz, PhD (Director, Center for Family and Community Health, University of California, Berkeley) dedicated to informing others and providing information from a multitude of sources on the biologic effects of EMFs.
- This article in particular titled: "[Effects of Exposure to Electromagnetic Fields: Thirty Years of Research](#)" (2023) is a deep dive into the research and information out there on EMFs effects on the human body.
 - In this article he highlights the work of Dr. Henri Lai, Professor Emeritus, University of Washington, Editor Emeritus of the Journal Electromagnetic Biology and Medicine, and an emeritus member of the International Commission on the Biologic Effects of EMF
- [This page from December 2023](#) offers some of the latest updated information and research being conducted on EMFs.

[TechWellness \(Mindful Living in a Digital World\)](#)

- A website dedicated to educating people of the effects of EMF to the public. It has a host of informative articles, links to further information and research, a number of free informative guides as well as some products for sale to help mitigate the influence of these signals and waves on our bodies and brains.
 - [Here is a link to the experts on their advisory panel](#)
 - [This is a list of EMF consultants on their website](#)

[The EMF Guy](#)

- Nick Pineault is the author of “The Non-Tinfoil Guide to EMFs” and has dedicated years to researching, studying, speaking to professionals, advocating, etc. to educate others on all things EMFs. His book is an easy to read and highly informative source of information and ways to reduce one’s exposure. Highly recommended reading for a great overview of what it is and what can be done to reduce its influence.
 - This is a nice write-up on 5G titled: [“5G in 5 Minutes: Quick & Rational Guide on 5G Radiation”](#)
 - He hosts [“The Smarter Tech Podcast”](#) which provides very helpful and informative information.
 - “This entire website is dedicated to helping you use technology in a way that’s safe and mindful, not the opposite. Have a look around — the vast majority of what I publish is 100% free.”
 - This site does sell courses and promote some products.

[The People’s Initiative Foundation](#)

- Mission Statement
 - “The People’s Initiative Foundation is a 501c3 non profit charity dedicated to educating the public on making change where there is stagnation in the areas that deeply effect us all, but have been overlooked by our government. For the past decade we have focused on exposing the global cover up of health effects from wireless radiation emitting devices and infrastructure, a threat to humans for sure, but also animals, plants, insects, birds, bees and tress and now with the onset of [5G, the very oxygen we breathe](#). PIF is committed to helping make the real changes necessary, by educating the public on how to change the law, bringing our own lawsuits and educating legislators.”

[EMF Academy](#)

- Website filled with a tremendous amount of information, research articles, helpful resources, etc. hosted by someone interested in bringing to light what he has found in his research to protect himself and his family and others.

[Shielded Healing](#)

- A website by Brian Hoyer dedicated to helping “re-invent human habitats for optimal health”. Provides useful tools and considerations about healthy environmental habitats.
 - This site does sell courses and promote products.
 - Article titled: [Wireless radiation perpetuates chronic inflammation](#)

- *"I personally suspect that the exposure to electromagnetic fields in the home and the microwaves from cell phone radiation are **driving the virulence of many of the microbes that are naturally in us** and makes them aggressive and illness producing. **Shielding patients from EMFs has been a more successful strategy to treating Lyme disease and to get people neurologically well** than any of the antibiotics or any of the antimicrobial compounds."*

~Dr. Dietrich Klinghardt, MD, PhD

[ElectricSense](#)

- A website with a number of articles and links to further information on EMFs, health, safety and ways to mitigate one's exposures and risks.
 - This site does sell courses and promote products.

[EMF Remedy](#)

- This website is hosted by someone who suffered significant health issues for many years who fully recovered once he was able to take some steps to make significant changes in his environment. His website and podcast seeks to educate others, from an unbiased approach from personal experience, provide resources and info on building biology assessment services.
 - [His background can be found here](#)
 - [He hosts a podcast and previous episodes can be found here](#)

[Why EMFs Are Getting More Dangerous. Plus 11 Steps You Should Be Taking To Protect Yourself.](#)

- Ben Greenfield Life website article from an interview with Joseph Mercola, author of *"The Shocking Truth About You Getting EMFd: 5G, Wi-Fi & Cell Phones—Hidden Harms and How To Protect Yourself"*.

[National Institute for Public Health and the Environment: Ministry of Health, Welfare and Sport.](#)

- "The measurements showed that the highest exposure to low frequency magnetic fields (50 hertz) occurred near overhead power lines and near equipment with motors, such as shavers and chargers for laptops or mobile phones. For radiofrequency electromagnetic fields the personal use of a mobile phone was the largest contributor to the exposure, followed by the contribution of people using mobile phones in the area, cordless DECT phones and base stations for mobile telecommunications. The highest exposure occurred where many people are together, such as in public transport, railway stations, shopping malls and cafes."
- "Exposure to electric, magnetic and electromagnetic fields (EMF), if they are strong enough, can lead to short term health effects. Exposure to low frequency fields that are strong enough can lead to dizziness, seeing light flashes and feeling tingling or pain through stimulation of nerves."

[Guidelines for Limiting Exposure to Electromagnetic Fields \(100 kHz to 300 GHz\)](#)

- The Radiation Safety Journal, Health Physics. 118(5): 483-524, May 2020.

["A novel database of bio-effects from non-ionizing radiation"](#). V Leach, S Weller, M Redmayne. Reviews on Environmental Health, 2018; 33(3): 273-280.

- “There are **3 times more biological “Effect” than “No Effect” papers**; nearly a third of papers provide no funding statement; industry-funded studies more often than not find “No Effect”, while institutional funding commonly reveal “Effects”. Country of origin where the study is conducted/funded also appears to have a dramatic influence on the likely result outcome.”

[“5G mobile networks and health—a state-of-the-science review of the research into low-level RF fields above 6GHz”](#). K Karipidis, et al. J Expo Sci Environ Epidemiol, 2021; 31: 585-605.

- [“ A critical analysis of Karapadis 5G health review”](#). Oceania RadioFrequency Scientific Advisory Association (ORSAA). Sept & Dec 2022.
- [“Comment on ‘5G mobile networks and health—a state-of-the-science review of the research into low-level RF fields above 6GHz’ by Karipidis et al.”](#) S Weller, et al. J Expo Sci Environ Epidemiol, 2023; 33(1): 17-20.

[Effects of electromagnetic fields exposure on the antioxidant defense system](#). Kivrak EG, et al. J Microsc Ultrastruct. 5(4): 167-176; Oct-Dec 2017.

- “The meaning of precautionary principle is as follows: *when human activities may lead to morally unacceptable harm that is scientifically plausible but uncertain, actions shall be taken to avoid or diminish that harm* (UNESCO 2015). For children, strict standards are required until scientific knowledge is established, specifically in facilities such as schools and preschools, where they stay longer. This article suggests precautions to reduce the risk of excessive EMF exposure in children.”

Table 1.

Precautions to reduce the risk of excessive electromagnetic field (EMF) exposure in children

Children can be exposed to EMF by electronic devices, high-voltage transmission lines, mobile phones, WiFi, etc.

For parents:

- Avoid long-term exposure to strong EMFs in home, school, or other places children spend much of their time.
- Avoid using electrical devices within 30 cm of the body.
- Avoid using smartphones directly against your child’s head.
- Keep your child’s body from getting hot while using mobile phones.
- Do not allow your child to use smart devices during meals or for the last hour before bed.
- Note that the effects of various devices using virtual reality and WiFi have on the neural development of children remain unknown.
- Most products that claim to reduce EMFs are ineffective or unproven.
- Ask your child’s pediatrician for information to guide your child’s use of smart devices.

For teachers, policymakers, and commercial companies:

- Teachers: Educate children on how to avoid excessive EMF exposure.
 - Policymakers: Create policies to reduce children’s EMF exposure from the environment.
 - Commercial companies: Create products that reduce children’s exposure to EMFs and issue warnings about them.
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- “The nervous systems of children are more vulnerable to the effects of electromagnetic waves than those of adults. Although studies on the effects of EMFs on children’s health are unestablished, precautionary principles should be followed for children and the exposure to EMFs among children should be minimized. The fact that EMFs are possibly carcinogenic according to the IARC should not be overlooked or interpreted with bias, and the opinions of clinicians should be given more weight than those of industries in the establishment of safety

policies for EMF use. Moreover, a study that assesses the effects of 5G frequency technology on children's health is required."

[Exposure to cell phone radiofrequency changes corticotrophin hormone levels and histology of the brain and adrenal glands in male Wistar rats.](#) Shahabi S, et al. Iran J Basic Med Sci. 2018 Dec; 21(12): 1269-1274.

- "Cell phone RF exposure induced significant hormonal and structural changes in adrenal gland and brain tissues. Therefore, the public should be aware and limit their exposure as much as possible." (Conclusion)
- This is one of a number of research articles that discuss the influence of EMFs on the adrenal glands which helps regulate hormones such as cortisol and adrenaline. Adrenal imbalances (sometimes referred to as "adrenal fatigue", which by name is not a recognized diagnosis) can produce a number of different symptoms such as fatigue (likely where the name came from), loss of appetite, muscle weakness, etc. It can become affected as a response to periods of increased stress to the system. One such "stressor" seems to be exposure to EMFs, making the system have to try to adapt to foreign inputs and not always being successful.
 - [This article from a wellness specialist](#) does a nice job describing "adrenal fatigue" and the role EMFs can have on it as well as a number of other links and references to understand this complex mechanism better.
 - This article is listed because of its informational content. There are products that the author of the article suggests using which continue to remain unclear if they are truly beneficial.

[Radiofrequency electromagnetic radiation-induced behavioral changes and their possible basis.](#) Narayanan SN, et al. Environ Sci Pollut Res. (2019) 26:30693-30710.

- "Mounting evidences suggest possible non-thermal biological effects of radiofrequency electromagnetic radiation (RF-EMR) on brain and behavior. Behavioral studies have particularly concentrated on the effects of RF-EMR on learning, memory, anxiety, and locomotion. The literature analysis on behavioral effects of RF-EMR demonstrates complex picture with conflicting observations. Nonetheless, numerous reports suggest a possible behavioral effect of RF-EMR. The scientific findings about this issue are presented in the current review. The possible neural and molecular mechanisms for the behavioral effects have been proposed in the light of available evidences from the literature."

[Health Effects of Electromagnetic Fields on Children.](#) Moon JH. Clin Exp Pediatr. 2020 Nov; 63(11): 422-428.

- "The nervous systems of children are more vulnerable to the effects of electromagnetic waves than those of adults. Although studies on the effects of EMFs on children's health are unestablished, precautionary principles should be followed for children and the exposure to EMFs among children should be minimized. The fact that EMFs are possibly carcinogenic according to the IARC should not be overlooked or interpreted with bias, and the opinions of clinicians should be given more weight than those of industries in the establishment of safety policies for EMF use. Moreover, a study that assesses the effects of 5G frequency technology on children's health is required."

[Health Implications of Electromagnetic Fields, Mechanisms of Action, and Research Needs.](#) Singh S, Kapoor N. Adv in Bio Vol, 2014, open access.

- “The several gaps in the existing knowledge do not permit one to reach a concrete conclusion but possibility for harmful effects cannot be underestimated in absence of consistent findings and causal mechanisms. Several studies with appropriate methodologies reflect the capacity **of electromagnetic radiations to cause adverse health effects and there are several credible mechanisms that can account for the observed effects.**”
- “For the time being, the public should follow the precautionary principle and limit their exposure as much as possible.”

[“EMF: Electric and Magnetic Fields Associated with the Use of Electric Power”](#)

- National Institute of Environmental Health Sciences, National Institutes of Health (2002).

[Evaluation of propagation characteristics using the human body as an antenna.](#) Jingzhen L, et al. Sensors (Basel). 17(12): 2878, 2017 (published online).

- “...which also revealed the feasibility of using the human body as a transmitting antenna or receiving antenna.”
- “The results indicated that the high-water content tissues, such as skin, muscle, heart, and so on, played an important role in signal propagation, which was helpful in improving the channel gain.”
- “In summary, the human body can be used as an antenna to achieve wireless transmission...”
- “The biological effect of exposure to EMF is a subject of particular research interest. The results of the recent studies not only clearly demonstrate that EMF exposure triggers oxidative stress in various tissues, but also that it causes significant changes in levels of blood antioxidant markers. Fatigue, headache, decreased learning ability, and cognitive impairment are among the symptoms caused by EMF. The human body should therefore be protected against exposure to EMF because of the risks this can entail.”

[Electromagnetic field devices and their effects on nociception and peripheral inflammatory pain mechanisms.](#) Ross CL, Teli T, Harrison BS. Altern Ther Health Med, 22(3): 52-64, Mar 2016.

- “The mechanistic pathway most often considered for the biological effects of EMF is the plasma membrane, across which the EMF signal induces a voltage change. Oscillating EMF exerts forces on free ions that are present on both sides of the plasma membrane and that move across the cell surface through transmembrane proteins. The ions create a forced intracellular vibration that is responsible for phenomena such as the influx of extracellular calcium (Ca²⁺) and the binding affinity of calmodulin (CaM), which is the primary transduction pathway to the secondary messengers...”
- “An emerging body of evidence indicates the existence of a frequency-dependent interaction between the mechanical interventions of EMF and cell signaling along the peripheral inflammatory pain pathway.”

[Influence of Electric, Magnetic, and Electromagnetic Fields on the Circadian System: Current State of Knowledge.](#) Lewczuk B, et al. Biomed Res Int. July 2014: 169459 (published online).

- “Despite divergences in the reported results, ELF-MF and radio frequency electromagnetic field have to be considered as factors possibly influencing the circadian system function, because a substantial number of studies demonstrated the changes in melatonin and cortisol secretion as well as in sleep after exposition to these fields. Due to widespread exposure of humans and animals to ELF-MF and radio frequency electromagnetic field, the studies on their biological effects should be continued.”

[Impact of electromagnetic field exposure on pain, severity, functional status and depression in patients with primary fibromyalgia syndrome.](#) El Zohiery A, et al. The Egyptian Rheumatologist. 43(4): 331-335; Oct 2021.

- “In conclusion, this study highlights a possible pathological link between fibromyalgia and exposure to electromagnetic radiation. Excess exposure to electromagnetic devices could possibly be one of the underlying or at least augmenting factors of fibromyalgia.”

[Measurement and exposure assessment of intermediate frequency magnetic fields from Electronic Article Surveillance \(EAS\) gates in libraries.](#) Ikuyo M, et al. Front Public Health, vol 10: May 2022.

- “Library workers have opportunities to be exposed to IF-EMF from EAS gates when passing through or by the gate. The exposure, in this case, is relatively high-level transient exposure repeated many times a day for a long term.”
- “There is another type of exposure for library workers at their working desks. It was found that IF-EMF from the EAS gate spreads a few meters from the gatepost. Library workers can be exposed the whole day long if the working desk is located within a few meters from the gate.”
- “In addition to these exposures, library workers are exposed to magnetic fields from the activator/deactivator of anti-theft magnetic strips for the EAS systems attached to the books (book-check unit, BCU). The device generates strong pulsed magnetic fields. The pulsed fields include IF components. Library workers operate BCU many times a day to cause repeated exposure to the pulsed magnetic field.”

[Are rises in electro-magnetic field in the human environment, interacting with multiple environmental pollutions, the tipping point for increases in neurological deaths in the Western World?](#) Pritchard C, Silk A, Hansen L. Medical Hypothesis. Vol 127; 76-83, 2019.

- A preponderance of information and references are provided in this paper and is absolutely something most people should read in order to better understand the connections and correlations of advancing neurological disease processes—especially at younger ages—and the connections to the advancement of the technological and electrical age.

BOOKS

- **Electromagnetic Fields of Wireless Communications: Biological and Health Effects.** DJ Panagopoulos (Ed). CRC Press, 2023.
 - This book is edited by Dr. Panagopoulos (PhD in Biophysics and primary/sole author of more than 40 peer-reviewed scientific articles on cell biology, effects of various EMFs on human and wildlife biology). It contains numerous contributions from experts in the fields of biologic and health effects of radio frequency, microwave and extremely low-frequency EMFs used in wireless communications and other technological applications.

- “This book is aimed at senior university/college undergraduate/graduate students in physics, biology, medicine, bioelectromagnetics, electromagnetic biology, non-ionizing radiation biophysics, telecommunications, electromagnetism, and bioengineering.”
- **EMF Freedom: Solutions for the 21st Century Pollution.** E Plourde PhD, M Plourde PhD. New Voice Publications, 2023.
 - Incredibly well-referenced book by Dr. Plourde who is an internationally recognized lecturer and clinical laboratory scientist (CLS). Her career included working with cutting-edge cancer and DNA medical research laboratories and is a certified menopause specialist and health specialist who began researching the topic after countless examples of unexplained health issues with her patients and herself.
- **The Non-Tinfoil Guide to EMFs.** N Pineault. N&G Media Inc, 2019.
 - This is another layperson/novice-friendly book written by an online journalist who doesn’t hold any “special abilities or prestigious credentials” but has spent “probably 1,500 hours studying the published works of amazing scientists, researchers, authors, engineers and activists who are studying the health effects of EMFs, second-guessing our current safety standards, and dedicating their entire lives trying to break up the status quo and make the world a better place.”
- **Radiation Nation: The Fallout of Modern Technology.** DT DeBaun, RP DeBaun. Icaro Publishing, 2017.
 - Easy to read and understand and well-referenced with practical steps and mitigation steps one can take to reduce their exposure to EMFs.
 - Daniel DeBaun is an internationally recognized expert in EMF radiation, related health issues and shielding—with particular focus on the effects of exposure from personal mobile and wireless devices. His concern grew from over thirty years of engineering experience in the telecommunication industry where he held leadership roles at AT&T, Bell Labs, Telcordia and SAIC.
- **Assessment of the Possible Health Effects of Ground Wave Emergency Network.** Committee on Assessment of the Possible Health Effects of Ground Wave Emergency Network (GWEN), Board on Radiation Effects Research, National Research Council. The National Academies Press, 1993.

LINKS TO VARIOUS BRIEFS, COMMITTEES AND OTHER JARGON ☺

[Current problems of radiobiology and hygiene of non-ionizing radiation: All-Russian Scientific Conference.](#) Nov 12-13, 2019, Moscow. Some titles of presentations from this 31st Conference dedicated to research into the medical and biological effects of electromagnetic field.

- The precautionary principle and practical solutions for mobile phone users protection
- Minimize cell phone EMF radiation system
- Reproduction system as a criterion for assessing the dangers of electromagnetic radiation from a mobile phone
- Hazard assessment of electromagnetic fields of mobile phones for children and teenagers: The results of the world’s only lasted 14-years physiological studies

- Electromagnetic load associated with the mobile phone use in younger students, and its impact on their well-being and brain bioelectric activity
- Significance of adequate information about the danger of cellular connection for health of population in the 21st century

[Research activities in Russian Federation for non-ionizing radiation health: Report of Russian National Committee on Non-Ionizing Radiation Protection for the WHO International EMF Project \(2023\)](#). Some highlights from their findings and recommendations:

- Valid from 01/01/2021 to 01/01/2027. This document contains important information related to non-ionizing radiation according scientific opinion of the RusCNIRP. These mandatory sanitary requirements apply both to educational organizations (kindergartens, schools, colleges, and educational programs using distance learning technologies and e-learning).
- The use of mobile communications for educational purposes is prohibited. The use of a mobile cellular communication facility on the territory of research organizations is prohibited (point 3.5.3).
- The use of monitors based on cathode ray tubes is prohibited (point 3.5.1)
- It is forbidden for children to use more than two different visual displays in the classroom as interactive whiteboard and personal computer, interactive whiteboard and tablet (point 3.5.2.)

[This article which was published in Molecular & Clinical Oncology](#) further discusses in depth the dramatic influence that a private, self-appointed “commission” based out of Germany called the International Commission on Non-Ionizing Radiation Protection (ICNIRP) has on decisions that the World Health Organization (WHO) and other governing agencies make on setting safety standards, monitoring changes in research and exposure levels, labeling levels of threat to humankind, etc. Highly recommended reading, but incredibly disheartening information.

The World Health Organization (WHO) has a fairly comprehensive page devoted to EMFs as well as further information as it relates to other forms of radiation. While it recognizes that there is a need for further research on the topic, especially as it relates to extremely low-frequency (ELF) radiofrequency, the WHO has categorized extremely-low frequency (ELF) electromagnetic fields (EMFs) as a Class 2B possible carcinogen.

- [Link to The International EMF Project Progress Report 2015-2016 can be found here](#). There are a multitude of links which provide further information.
- [General information from the WHO website on EMFs can be found here](#)

This review from the Brookings Institute titled: [“The FCC and cities: The good, the bad and the ugly”](#) discusses in depth the Broadband Deployment Advisory Committee (BDAC) which was formed by the FCC to “accelerate and broaden development of next-generation broadband networks and reduce the digital divide”. It goes deep into the private vs public interests, what the BDAC membership looks like (most work for telecommunications companies and other industry representatives).

If you are really looking to go for a deep dive, head to the [“Human exposure to radiofrequency electromagnetic fields and reassessment of FCC radiofrequency exposure limits and policies”](#). This little bit of light reading ☺ goes deep into the FCC’s latest rulings, exemptions, established limits, etc. from April 2020.

The Washington Spectator published this article in March of 2022 titled: [“Federal court instructs FCC to review electromagnetic radiation standards”](#) which discusses in depth the lawsuit brought forth by a multitude of organizations--Children’s Health Defense, Consumers for Safe Cell Phones, Environmental Health Trust, and 11 other petitioners). The FCC’s power of decision-making is virtually unmatched in its authority over what determines radio-frequency radiation (RFR) exposure from wireless devices for people of all ages, wildlife and the environment and continues to feel that the limited that were set in 1996 are still fine today.

In the online book: [Captured Agency: How the Federal Communications Commission Is Dominated by the Industries It Presumably Regulates](#) by [Norm Alster](#) and published by the Center for Ethics at Harvard University, Mr. Alster does a tremendous amount of research into committee meetings, funding and donations, missions and agendas of various agencies and much more. Helpful background on who are the people involved in making decisions for said agencies and their backgrounds and ties to various industry interests.

The organization known as [5G Space Appeal](#), which has the international support of independent—not industry—scientists, doctors, organizations, health professionals and individuals, [has written up an extensive document](#) outlining the very clear research that discusses the negative affects that 5G-based EMFs have on human physiology. This webpage outlines the appeal that has been sent to international governmental bodies trying to slow down the advancement of 5G installations and smart cities.

The American Heart Association on its website page which provides information as it relates to pacemakers and ICDs notes the “very small risk” however also recognizes (bold is author’s emphasis:

- Wireless transmissions from the antennae of phones available in the United States are a very small risk to ICDs and even less of a risk for pacemakers.
 - Technology is rapidly changing **as the Federal Communications Commission (FCC) makes new wireless frequencies available.**
 - Newer cellphones using these new frequencies might make ICDs and pacemakers less reliable. The **wireless industry** is investigating that possibility.
 - Keep your cell phone at least six inches away from your ICD or pacemaker by using it on the ear opposite where your device was implanted. Avoid keeping your cell phone in your front chest pocket.

One example of many of mainstream media’s interpretation of health effects of EMFs. This author strongly encourages people to read from these sources of information with a critical eye, as this article is a good representation of information which may not be appreciated otherwise.

[Should you be worried about EMF exposure?](#) (Healthline, 2023)

- An interesting and very misleading article as the subtitle states:

- “Electric and magnetic fields occur naturally and also come from human-made sources. Scientists and oversight agencies generally agree that low-frequency EMFs pose little danger to human health.” (Underlined areas are author’s emphasis)
- However, the article then goes on to note the WHO, IARC and other organization’s classification:
 - “The International Agency for Research on Cancer (IARC) classified non-ionizing EMFs in the radiofrequency range as Group 2B, a possible human carcinogen. These fields are produced by electronic products like cellphones, smart devices, and tablets.”
- And yet interestingly, a number of other things were noted in the article as well:
 - “One review of more than two dozen studies on low-frequency EMFs suggests that these energy fields may cause various neurological and psychiatric problems in people.”
 - “The researchers followed cancer rates and cellphone use in more than 5,000 people in 13 countries. There was an association between the highest rate of exposure and glioma.”
 - ***“The gliomas were most often found on the same side of the head that people used to speak on the phone.”***
 - “However, this research also mentioned various potential biases and confounding variables that make the potential association difficult to interpret.”
 - “Even so, the researchers said that the connection wasn’t strong enough to conclude that cellphones caused cancer.”
 - “They suggested that long-term EMP exposure could be harmful to cognitive ability and may induce pathology similar to that of Alzheimer’s disease.”
 - “They added that more research is needed.”
 - “Also, tentative research suggests that the body’s tissues and its nervous system may be affected by the heat generated by RF-EMFs. A study conducted on rats and mice suggested that the heat from cellphones affected the body tissue heating and nerve activity.”
 - “Again, researchers said more study is needed.”
 - “Another research study suggested that RF-EMFs might contribute to neurological cognitive disorders.”
 - “But since the reported research was performed either on cells or animals, its results don’t necessarily apply to people.”