

Josh Honeyman

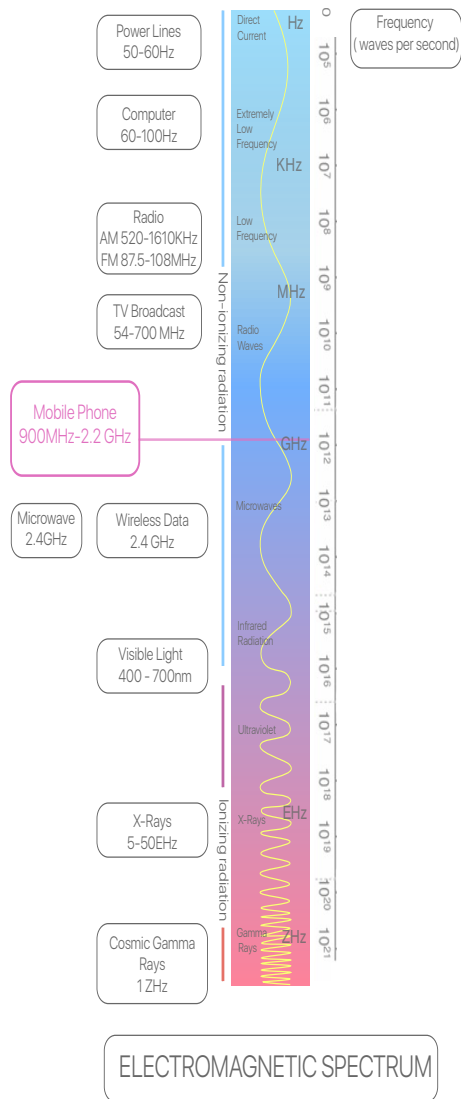
Toxic Connections

Is your iPhone messing with your head ?



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A few months ago, I had dinner with an old friend who has worked in Time Based Media design for a fair while. She was complaining of long-lasting headaches, concentration, and sleep loss which she attributed to Wifi and Bluetooth usage. By avoiding devices which use Wifi and Bluetooth her afflictions vanished. I was curious as to what might be going on and as part of this article, I uncovered a wealth of information which was at once conflicting, inconclusive, and yet critical to our wellbeing.

The increased ownership of mobile smartphones such as the iPhone has led to greater usage, and continuous connectivity to the internet via Wifi as well as Bluetooth connection to other devices such as headphones and speakers. Wifi and Bluetooth are a form of Electro-Magnetic Frequency or EMF which is common in our internet driven lifestyles and used by many devices within our households and workplaces. So, what is an EMF and is it bad for you? Is there such a thing as too much exposure? Are there any long-term effects?

An EMF operates as a wave frequency where the size of the frequency determines the wavelength. The smaller and faster the wavelength the more dangerous the signal. Mobile phones, Wifi, and Bluetooth all use low Frequencies which is less harmful to humans than the shorter frequencies such as X-Rays. There is some evidence which points to low frequency risks depending on user age, gender, length and types of exposure, certain occupations, and proximity of the device to your body. The International Agency for Research on Cancer (IARC) has classified radiofrequency electromagnetic fields as possibly carcinogenic to humans (Group 2B). (American Cancer Society, 2020), The Australian Radiation Protection and Nuclear Safety Agency concludes that "There is no established scientific evidence that the use of mobile phones causes any health effects. However, some studies have shown a weak association between heavy mobile phone use and brain cancer." (Australian Radiation Protection and Nuclear Safety Agency, 2020).

Less is known about thermal damage. The iPhone uses a similar frequency to Microwaves. Though much weaker, the effect of placing an iPhone next to your Brain -which floats in a container of fluid – has the potential for radiation exposure. The inconclusiveness of studies means there is no definite answer as to what effect exposure to low frequency EMF can have over the long term and what constant exposure might result in. We are, as Martin Blank (2014) says in his book "Overpowered :What science tells us about the dangers of cell phones and other wifi-age devices", part of a giant biological experiment in EMF exposure where the results may not be known for another couple of decades.

So, what is to be done?

The reality is it is impractical, and almost impossible to avoid being exposed to EMF. Giving up your iPhone and avoiding wifi usage might be possible. However, avoiding being in range of radio antenna towers or wifi signals would require a hermit like existence in the wilderness. Instead, Simple precautions and some common sense,

References:

American Cancer Society. (2020). Cellular (Cell) Phones. Cancer.Org. <https://www.cancer.org/cancer/cancer-causes/radiation-exposure/cellular-phones.html>

Mobile phones and health. (2020, July 30). ARPANSA. <https://www.arpansa.gov.au/understanding-radiation/radiation-sources/more-radiation-sources/mobile-phones>

Blank, M. (2014). Overpowered : What science tells us about the dangers of cell phones and other wifi-age devices (A Seven Stories Press first ed.).

such as not sleeping next to your iPhone, using speakerphones, limiting call duration, and avoiding usage in your car are good points to start. (Velmurugan, 2016, p. 166)

There are also Government safety guidelines which stipulate that mobile phones abide by the Specific Absorption Rate (SAR). This is the amount of RF energy from the phone which is absorbed by the user's body. The amount of SAR levels varies across phones; however, the maximum SAR level must not exceed 2 watts per kilogram (of body weight). (Australian Radiation Protection and Nuclear Safety Agency, 2020)

So, do not panic, keep using your iPhone, but get smart and act with common sense and a degree of caution. So that if this long-term experiment does turn bad, you might at least avoid the worst of the results.

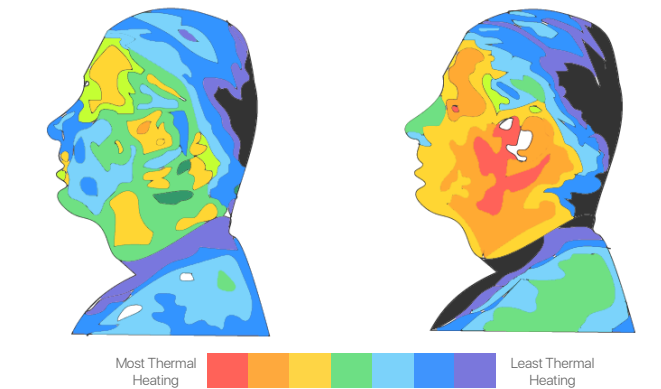


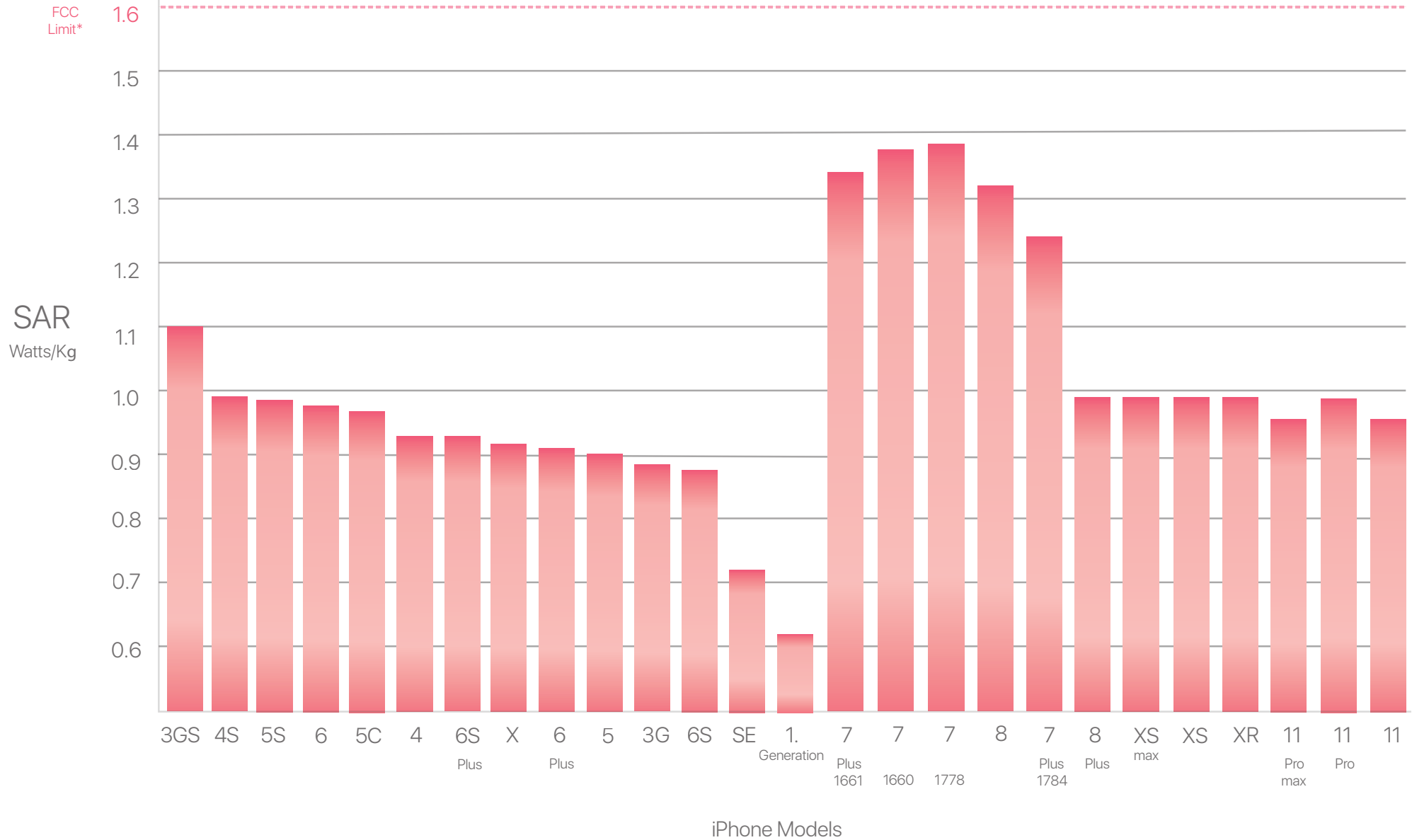
Image of head showing normal thermographic regions of temperature differences

Image of head showing thermographic after 15 minute mobile phone call highlighting the red and yellow heat exposure which can cause negative health effects.

Raghaven, S. (2017, December 21). Wi-Fi has 6 shocking health hazards. Emftests.Com. <http://emftests.com/wi-fi-6-shocking-health-hazards/>

Warren, T. (2011, September 9). Velmurugan, M. S.(2016). *Environmental Hazards and Health Risks Associated with the Use of Mobile Phones*. *Journal of Green Engineering*, 5(2),151-174. <https://doi.org/10.13052/jge1904-4720.524>

Specific Absorption Rate (SAR) of iPhone models



*The FCC SAR limit is set by the US Federal Communications Commission. In Australia the SAR limit is 2 watts/kg as set by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA).

What can you do to minimise EMF effects

