



The Wellness Family

Dr. Greeley Keeps You Informed

5G Technology and Your Health

It was in the late 1800's that power plants began operations and electric lighting became every day. The convenience of electrical machines, such as refrigerators, came later and then microwaves and televisions became the norm around the mid-20th century. With the mass transmission of electrical power to every home, came an uptick in EMF emissions, electric and magnetic fields that have many health concerns. Today, 5G technology may make EMF emissions seem like child's play.

What is 5G technology?

5G is a new generation of mobile network technology that has been described as "blazingly fast," and, based on the need for some to work from home, is considered a necessity. In its most basic terms, 5G technology is the 5th Generation wireless network. Depending upon the source, it is 70 to 100 times faster than its predecessor, 4G. The most important thing to know about 5G, though, is how it works.

While all four previous generations of mobile networks used macro cell towers that were hundreds of feet tall and required a vast power outlay to transmit over long distances, 5G is different. It uses a combination of frequencies from multiple bands to maximize the transfer of data. In addition to using the traditional macro cell towers, 5G also utilizes a large number of much smaller micro cells because it uses something called "millimeter wave spectrum bands" to create a more thorough coverage for an ultrahigh-speed network.

Basically, when 3G upgraded to 4G, it was still using networks that operated at around 1 to 3 gigahertz (GHz) but 5G signals use 3 different bandwidths. Low-band operating at below 1 GHz, mid-band using frequencies up to 6 GHz and high-band frequencies that will use a minimum of 24 GHz bands and higher, since the Federal Communications Commission (FCC) has approved up to 300 GHz. This high-band frequency will introduce the millimeter wave.

What are millimeter waves?

1st through 4th wireless generations all used low to mid-band signals that were no more than 6 GHz. Just like all other radio signals, they travel in the air and are everywhere. The difference with high-band signals or millimeter waves is that they're such a high frequency that they don't travel as far and thus are unable to pass through buildings; being absorbed by trees, the earth's

atmosphere and even the uppermost layers of human skin. In an effort to get around this problem, telecom companies will install small cells with short range cellular antennas in huge numbers.

There are a few different types of cells, all of which have different broadcast ranges. Femtocells have the shortest range reaching less than 10 meters. Microcells have the longest range, reaching roughly 2 kilometers. Therefore, in order to create a big enough coverage area, cells will need to be installed at a much higher density – around one every 10 to 12 households. What this means is that, in the near future, it will be next to impossible to avoid sources of EMF radiation.



The bigger risk being the sheer volume of cell towers that will be put in place to support 5G coverage.

Is 5G safe?

The short answer is – probably not. In 2019, the FCC announced that they would be reaffirming the radio frequency radiation (RFR) exposure limits that were adopted in the late 1990s. These limits were based upon the behavioral changes seen in rats that were exposed to microwave radiation and were designed to protect us from short-term heating risks due to RFR exposure. However, since the FCC first adopted these limits, more than 500 studies have found harmful biologic or health effects from exposure to RFR at intensities too low to cause significant heating. In other words, the original concerns raised by the 1980s research, which was the foundation of the FCC limits placed in the 1990s, are no longer the primary concern.

Dr. Yael Stein, MD, sent a letter to the FCC in 2016 sharing the concerns of a group of physicists from the Hebrew University in Jerusalem, together with several physicians, based on their research into millimeter wave technology (sub-Terahertz frequencies). In essence, there is no way to know how an inundation of these types of waves will affect the human body especially the most susceptible (babies, pregnant women, the elderly, the sick or electro hypersensitive individuals). However, their research did show that public exposure to millimeter waves, could cause humans to "percept physical pain via nociceptors." Additionally, he stated

that the widespread use of 5G technology may create "... more of the health effects currently seen with RF/micro-wave frequencies including many more cases of hyper-sensitivity (EHS), as well as many new complaints of physical pain and a yet unknown variety of neurological disturbances." The original guidelines set forth by the FCC regarding EMF emissions focused only on acute exposure, ignoring the possibility that chronic exposure to lower levels may be equally or even more likely to cause harm.

Another letter was written to then-governor Jerry Brown, in 2017, by Dr. Martin Pall, Professor Emeritus of Biochemistry and Basic Medical Sciences at Washington State University expressing his concern over the EMFs caused by 5G technology. Namely, that EMFs have a large biological effect on the cells of our bodies. He says that there are thousands of studies showing diverse health impacts supported by both the biology and the physics.

A third letter was written in 2017 and signed by over 180 scientists and doctors from over 25 countries, asking for a moratorium on the roll-out of 5G wireless until the potential hazards for human health and the environment have been fully investigated by scientists independent from the telecommunications industry.

In each of these letters, the biggest concern was the unknown. Despite the industry claiming that there are no ill-effects from EMFs, research (and time) has shown this to be false. Therefore, it stands to reason, that their claims that there will be no ill-effects from 5G are equally untrustworthy. The bigger risk, as previously stated, being the sheer volume of cell towers that will be put in place to support 5G coverage.

5G Dangers

In an article published by the Environmental Health Trust, Ronald Powell, Ph.D. notes, "There is NO SAFE WAY to implement 5G in our communities; rather, there are only 'bad ways' and 'worse ways'."

Joseph Mercola, DO, says that there is mounting research suggesting the proliferation of 5G for the sake of faster wireless internet could be a public health disaster. People have reported mass die-offs of bees around 5G towers in California and residents in Gateshead in the U.K. started reporting insomnia, chronic nosebleeds, and stillbirths after the installation of streetlamps that emit 5G radiation in 2016.

Finally, a 2019 article, written by Joel M. Moskowitz, Ph.D., from the University of California, Berkley, and published by *Scientific American* warns, "We have no reason to believe 5G is safe."

Avoiding the Dangers

While there is no way to know the actual exposure or the risks associated with it, there are things that we can do to mitigate these risks starting with recognizing that this is a chemical stressor to the body and treating it as such.

As with all other EMF concerns, the first step is to try to lessen exposure and wearable technology is probably the biggest concern. For example, the newest Apple iWatch and FitBit have cellular technology, but it isn't necessary for it to be activated in order to benefit from most of its applications. It is capable of being turned off and should be. If the cellular services cannot be turned off on your device, do not wear it to bed and do not keep cellular technology near your bed.

Additionally, do not carry your cell phone in your pockets or anywhere else on your body for long periods of time as this is a direct exposure to EMF and cellular transmissions.

Finally, your body will deal with stressors best when it's operating at its best. For optimal function, live the wellness lifestyle with nutritious eating, daily exercise or other healthy physical activities, and regular Chiropractic care. Be sure to ask your Family Wellness Chiropractor if you have any questions about living the wellness lifestyle.



*Dear Patient,
Dr. Greeley is dedicated to providing you with the absolute best in family wellness care. So take a moment today to discuss with your Family Wellness Chiropractor any concerns you may have regarding your family's overall health and wellness.*

This newsletter is provided to you by:

The Chiropractic Office of
Dr. Katie Greeley
10815 RR 222, Building 3C; Suite 100
Austin, TX 78730
512.234.1868