



5G

How To Protect Yourself

PLEASE READ THIS FIRST: A Personal Message From Lloyd Burrell



I guess you've heard in the news or read something about cell phone radiation being dangerous. I guess you've also seen or heard reports that said exactly the opposite. If you're feeling confused, join the club. A lot of people of people are confused about this.

I, however, am not confused.

And for good reason, it's because I'm one of the growing number of folks who have experienced first-hand the devastating effects of cell phone radiation.

My symptoms were so bad that at one point I was experiencing debilitating symptoms not just from my cell phone, but also my computer, the TV, the radio in car, my regular wired telephone and pretty much everything electrical.

My life became a living hell. And no doctor could help me.

It too me nearly 10 years to overcome these debilitating symptoms and get my life back on track. Thankfully today I now live a healthy symptom free life.

I thought initially it was only me that was being impacted by technology in this way, then I realized that there were many others that were experiencing similar symptoms. Then I realized that, according to scientific studies, and a growing number of experts EVERYONE is impacted by electromagnetic fields. It's just that some people can feel it.

And so I have been talking about this online for over 10 years, raising awareness and sharing solutions.

I have recently written a book called *The EMF Practical Guide* which lays out in great detail the science about the dangers of EMFs and I share hundreds of ways to protect yourself.

Attached is an extract from my book which explains what 5G is and how to protect yourself.

Thanks you for your time.

Lloyd Burrell

Electricsense.com

Founder of the EMF Health Summit

It seems George Orwell wasn't far wrong. The next chapter in the wireless colonization of the globe is 5G and the Internet of Things (IoT), which will connect everything! Exciting times, eh?

In this world where it seems everyone wants “more”, 5G promises to deliver. More data, quicker data, faster downloads, all in more real time. By all accounts, it will enable your cell phone to download a Hollywood movie at the blink of an eye.

5G will support at least 100 billion devices and will be 10 to 100 times faster than current 4G technology—4G was already about 10 times faster than 3G.

5G, the latest generation of cellular technology, is mainly about connecting people, whereas the IoT is about connecting things, objects. Lots of objects, actually. Billions of them. It's quite a double act.¹

We are talking toothbrushes that can make a 3D map of your mouth and report your dental record to dentists, toasters that can ping you on your smartphone when your toast is ready, cars that drive themselves, washing machines that order their own detergent and softener, refrigerators that will send out for milk, butter or eggs when you're getting low. On the supply side, your every whim will be pampered by companies running automated platforms with deliveries assured by self-piloting drones.²

Everything you buy will be smart, also called a smart connected thing (SCoT). That's to say a “product, asset and other things embedded with processors, sensors, software and connectivity that allow data to be exchanged between the product and its environment, manufacturer, operator/user, and other products and systems”.³

Further down the line it could mean the creation of “smart cities”. In Asia and Africa, brand new smart cities are already on the drawing board.⁴ Elsewhere, existing cities will undergo a gradual transformation to make them “smarter”.

The end goal of the visionaries (lunatics?) behind these technological advances is the eventual connection of everyone and everything on earth.

If something can be connected, it will be connected in a 5G world. Hundreds of billions of microchips will be connected in products from pill bottles to plant waterers, requiring massive deployment of small cell antennas in cities and towns.

—Tom Wheeler, former chairman of the FCC.

Wireless Cell Antennas Galore

¹ <http://fortune.com/2017/01/04/att-5g-directv/>

² Cindy Russell, *A 5G Wireless Future: Will it give us a Smart Nation or Contribute to an Unhealthy One?*

³ https://en.wikipedia.org/wiki/Smart_object

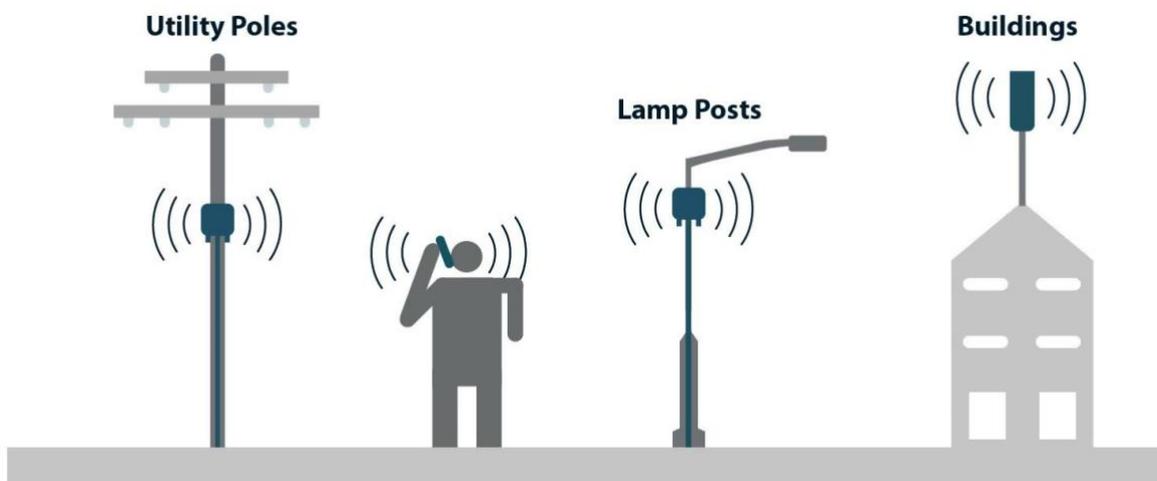
⁴ <https://www.weforum.org/agenda/2018/08/smart-cities-forest-city-belmont/>

5G offers this mind-blowing data capability and connectivity by using largely untapped bandwidth of very short wavelengths (less than 10 millimeters) called millimeter waves (mmW) in the frequency range 20 GHz to 300 GHz. 5G, however, will also make use of upgraded 4G LTE signals at lower and mid-range frequencies, from 600 MHz to 6 GHz.⁵

Specifically, 5G proposes to bring 3G, 4G LTE,⁶ Wi-Fi and new 5G antennas closer to people through millions of small cell antenna arrays.⁷

These higher frequencies of mmWs will not have the same ability to penetrate buildings as existing frequencies. They won't travel so well through buildings and will tend to be absorbed by rain and tree leaves, which will interfere with the signal.

To counter this problem, 5G will use advanced technologies, such as massive MIMO (Multiple Input Multiple Output) carrier aggregation, full duplex and beamforming that will send powerful and brief signals targeted to your cell phone and fixed Internet consumer equipment units (CEUs) when you use them. In the US alone, this will mean millions more antennas and globally, tens of millions more.



This could mean wireless antennas on lamp posts, utility poles, homes and businesses throughout entire neighborhoods, towns and cities.

As if that is not enough, wireless signals at millimeter wave frequencies will be raining down on us from the skies. Plans are already underway to launch 20,000 satellites and drones to send focused beams of microwave radiation over the earth.⁸ This might all sound like science fiction but it's already happening. In May 2019, SpaceX launched its first batch of satellites. OneWeb and Amazon are following hot on their heels.⁹

⁵ <https://spectrum.ieee.org/video/telecom/wireless/5g-bytes-millimeter-waves-explained>

⁶ The terms 4G and 4G LTE (Long Term Evolution) are sometimes used to mean the same thing. 4G LTE is a more advanced form of the technology.

⁷ <https://buildingbiologyinstitute.org/free-fact-sheets/5g-understanding-the-technology-protection-strategies/>

⁸ <http://bit.ly/20000-Satellites-5G-greenmedinfo>

⁹ <http://bit.ly/activistpost-60-Satellites-Into-Space-5G>

All these antennas and satellites will add ANOTHER layer of man-made EMFs beyond that which already exists. 5G combined with existing EMF frequencies will create a soup of electrosmog with a level of density that our planet has never previously experienced.

Should You Be Concerned?

What this comprehensive global digital connectivity means is we're going to have radio-frequency microwave radiation blanketing and permeating our homes, cities, counties and airspace like never before.

I'm all for progress, but there are reasons for concern:

1. Skin diseases. Industry is downplaying the health effects of this technology by saying that the mmWs will only penetrate skin deep. This may be the case, yet effects on the skin are the biggest concern. Dr. Ben-Ishai of Hebrew University in Israel explains that our sweat ducts act like “an array of helical antennas when exposed to these wavelengths”, meaning that we become more conductive. Research on millimeter waves conducted by Dr. Yael Stein of Hebrew University found that these frequencies can cause physical pain, the possibility of many skin diseases, and even cancer.

Millimeter waves have been used by the U.S. Army in crowd dispersal weapons. It's also known that U.S., Russian and Chinese defense agencies have been developing weapons that use the mmW frequency range to cause burning sensations on the skin as a form of crowd control.¹⁰

Last, but not least, your skin plays an important part in your immune system. The concern is that MMWs in zapping your skin will zap your immune system.

2. Cataracts and eye damage. A 1994 study¹¹ found that low-level millimeter microwave radiation produced lens opacity in rats, which is linked to the production of cataracts. An experiment conducted by the Medical Research Institute of Kanazawa Medical University found that 60 GHz “millimeter-wave antennas can cause thermal injuries of varying types of levels”.

3. Heart rate changes. A 1992 Russian study¹² found that frequencies in the range of 53–78 GHz (that which 5G proposes to use) impacted heart rate variability in rats, an indicator of stress. Another Russian study on frogs whose skin was exposed to mmWs found heart rate changes (arrhythmias).¹³

4. Profound immune system effects. A 2002 Russian study¹⁴ examined the effects of 42 GHz microwave radiation exposure on the blood of healthy mice. It was concluded that “the whole-body exposure of healthy mice to low-intensity EHF (extra high frequency) EMR has a profound effect on the indices of nonspecific immunity”.

¹⁰ <https://ehtrust.org/key-issues/cell-phoneswireless/5g-networks-iot-scientific-overview-human-health-risks/>

¹¹ <https://www.ncbi.nlm.nih.gov/pubmed/7897988>

¹² Cindy Russell, *A 5G Wireless Future: Will it give us a Smart Nation or Contribute to an Unhealthy One?*

¹³ Cindy Russell, *A 5G Wireless Future: Will it give us a Smart Nation or Contribute to an Unhealthy One?*

¹⁴ <https://www.ncbi.nlm.nih.gov/pubmed/11855293>

5. Depressed cell growth rates. A 2016 Armenian study observed the effects of mmWs at low intensity (mirroring future 5G environment) on E-coli and other bacteria. They found that the waves had depressed cell growth as well as “changing properties and activity” of the cells. The concern is that it would do the same to human cells.

Other cited effects of 5G are possible antibiotic resistance,¹⁵ not to mention effects on plant health and disruption of our ecosystem generally—notably impacting bird, bee and insect populations,¹⁶ which appear particularly vulnerable.

Just to be clear, all of the health effects on humans and effects on plants and animals listed above are in ADDITION to the adverse effects of EMFs that I’ve already talked about so far in this guide.

5G, because of the frequency that’s going to be used and because of the extraordinarily high pulsation level that will be used, is a much bigger threat to our health than the things we already have, which are very substantial threats to our health.¹⁷

Dr. Pall’s name pops up a lot, I know. But he’s not the only scientist out there voicing concerns about this technology. In 2017, 180 doctors and scientists from 35 countries signed a petition calling upon the European Union to enact a moratorium on the rollout of 5G until potential hazards for human health and the environment have been fully investigated by independent scientists.¹⁸

Another issue few people are paying attention to is the bandwidth.

Flying Blind

Let’s not forget, the reason 5G and the IoT are on the agenda is because consumers want more, more, more. It’s an evolution of technology to meet consumer demand. So, while this hyper connectivity is a new thing, most of the technology behind it has been under development for decades. The earliest applications of millimeter wave technology were in radio astronomy back in the 1960’s and the military has had millimeter wave applications since the 1970s.¹⁹

Previously, these technologies were used in discrete point-to-point connections. What’s significant today is the scale of application of these technologies.

The truth is no one really knows what the health impacts of 5G and the IoT are going to be because the data and studies we have to date are not “genuine 5G” studies. They were done on EMFs in the same frequency range as 5G, but they didn’t use pulsed radiation.²⁰ The science shows very clearly that pulsed, modulated radiation is a lot more dangerous than non-pulsed radiation.²¹

¹⁵ <https://articles.mercola.com/sites/articles/archive/2016/09/20/stop-antibiotic-resistant-bacteria.aspx>

¹⁶ <https://www.nature.com/articles/s41598-018-22271-3>

¹⁷ Martin L. Pall, PhD, Professor Emeritus of Biochemistry and Basic Medical Sciences, Washington State University.

¹⁸ <http://www.5gappeal.eu/the-5g-appeal/>

¹⁹ http://www.loeacom.com/pdf%20files/L1104-WP_Understanding%20MMWCom.pdf

²⁰ <https://www.radiationresearch.org/research/dr-martin-palls-latest-compilation-of-emf-medical-research-literature/>

²¹ <https://magdahavas.com/pick-of-the-week-12-why-pulsed-microwave-frequencies-are-more-harmful/>

The other big unknown is the bandwidths. The bandwidths being used for 5G are increasing. Without getting overly technical, bandwidth is like the wideness of the road. To transmit the data faster, the road needs to be wider. More bandwidth combined with increased signal strength and compression technology means higher data transmission speeds. Unfortunately, that also probably means more biological impact.²²

We are flying blind with all this. The reports I've seen so far from people that have been exposed to 5G are not encouraging.

Residents of Geneva, Switzerland, reported feeling bad “literally overnight” following the installation of 5G antennas in the city. Common symptoms reported were insomnia, tinnitus, and headaches.²³ The deployment of 5G was subsequently put on hold.

For Maria, it started when 5G was installed in a lamppost next to her home:

5G fitted in a lamppost outside my home. Ears ringing, can't sleep, moody, balance disorientation. I'm laughed at. I know 5G started these symptoms.²⁴

Dr. Lyn Patrick shared with me that since 5G has started to be rolled out in Dallas, Texas, her colleague Dr. Stephanie McCarter has seen a significant increase in the number of young people who have the common symptoms of EMF sensitivity. People recalled that their hands started heating up when they held their cell phone and computer in their hands. Then that evolves to other symptoms, such as agitation, anxiety, insomnia, fatigue, skin rashes, numbness, tingling, and heart palpitations.

Dr. Stephanie McCarter explains:

We have seen an escalation of intermittent symptoms, like burning of skin or tingling while holding a cell phone, that is episodic, escalate to full blown sensitivities of headaches, insomnia, tremors, difficulty concentrating, short-term memory loss, indigestion, fatigue, burning all over, anxiety, depression and heart palpitations with placement of 5G antennas. Patients have become very EMF sensitive and cannot tolerate being indoors in public places due to wireless routers, towers, etc.

What Is 5G Really About?

5G is the latest generation of cellular technology. So, yes, you are going to be able to do even more amazing things with your cell phone. But there is more to it than that.

Forbes claims that 5G and the IoT are at the center of a battle for high-tech supremacy, principally between America and China, and that whoever wins this struggle will become the dominant superpower in the twenty-first century.²⁵

²² Pawel Wypychowski, EMF Experts Solutions Club interview.

²³ <http://bit.ly/lillustré-5G-cobayes>

²⁴ Story submitted to ElectricSense.com

²⁵ <https://www.forbes.com/sites/arthurherman/2018/10/17/the-war-for-the-worlds-5g-future/>

Some argue that the real reason for this heightened connectivity is about energy efficiency. “5G is itself more cost effective and energy efficient than past generations of wireless technology, thus making its own contribution to energy savings”.²⁶

These energy and cost savings would be facilitated by all these connected electrical devices in our homes and businesses as part of an enlarged smart grid. They would be used to monitor and track energy-usage patterns and help us make choices that hopefully result in energy savings. In a world with rapidly dwindling resources, anything that can ensure that these resources are better used would seem to make a lot of sense.

This is a persuasive argument, if it were true.

Swiss IT magazine reports that 5G systems have triple the energy consumption of 4G.²⁷

French researchers also suggest that significant pollution will be caused through processing data. A recent study found that riding for an hour and a half in a self-driving car generates as much data as 3,000 people using the Internet for one day. Processing this data will produce the equivalent of 26 g/kilometers of carbon emissions.²⁸

These new data streams also raise questions about privacy issues. There are reports that 5G and the IoT will be used to spy on you, that your most intimate personal data will not only be used by intelligence agencies but would also be shared with private companies so they can profile you, as revealed by former NSA technical director William Binney, the man who designed the NSA’s automated surveillance systems.²⁹

Behind all the smoke and mirrors, what’s obvious to me is that 5G is ultimately about creating more demand to sell more devices, so big corporations can make more money.

Is This Really As Bleak As It Sounds?

Perhaps not, because although 5G is being rolled out, we are still a long way off from having the infrastructure necessary for full 5G deployment.

All this will cost money—LOTS of money. The economics of this are such that governments will sell off parts of the frequency spectrum at exorbitant prices (because they need the money) to telecom companies who will invest in infrastructure to create the “5G product” in the hope that they can profit by selling their product to the public and businesses. The socioeconomic impact of 5G is estimated to be \$2.2 trillion over the next 15 years.³⁰

Yes, there is a LOT of money to be made. But 5G is a huge gamble. Firstly, for our governments, it’s a huge gamble with our health. We must ask what the long-term consequences will be. Secondly,

²⁶ <https://www.engerati.com/article/5g-%E2%80%93-what-will-it-bring-energy-sector>

²⁷ https://www.itmagazine.ch/Artikel/70199/5G_hat_ein_Energieproblem.html

²⁸ <https://www.sudouest.fr/2019/06/02/5g-et-internet-satellitaire-vers-l-explosion-des-donnees-6157775-706.php>

²⁹ https://www.youtube.com/watch?v=uYg_0Imnr4&mc_cid=e642a09eee&mc_eid=788abdf1b1

³⁰ <http://bit.ly/gsma-Poorly-Designed-Spectrum-Auctions-Risk>

for the companies that are investing in 5G, the gamble for them is that sufficient numbers of people “buy into” this new technology to make it profitable AND that there is no public backlash.

What Can You Do To Protect Yourself?

On a collective level, I encourage you to be part of this backlash. No, you don’t have to become a revolutionary overnight. But around the world, people are saying no.

Brussels, Belgium, was the first city to decide against a 5G rollout.

The people of Brussels are not guinea pigs whose health I can sell at a profit.

—Céline Fremault, Environment Minister commenting on the proposed 5G rollout.

Geneva, Switzerland, has called for a moratorium on 5G,³¹ and several other cantons have said NO.³² In the Netherlands, parliament insist that research must be carried out before any approval of the 5G network.³³ The mayor of Florence, Italy, has refused to grant permission for 5G towers³⁴ and the Prime Minister of Poland has personally signed an International Appeal to stop 5G.³⁵

Local rallies are taking place all over the US. The Environmental Health Trust³⁶ has compiled an analysis of dozens of states and cities taking action against 5G. Here are some of them:

Hallandale Beach, Florida	Resolution passed calling the state federal government to initiate a study of the health effects 5G and to develop installation guidelines
Fairfax, California	Urgency Ordinance to Establish New Regulations for Wireless Telecommunications Facilities
Portland, Oregon	The City of Portland has voted a resolution to require the FCC to investigate the health effects of 5G and to make the information available to the public
Mill Valley, California	The City Council voted to prohibit new towers in residential areas and to require a minimum distance of 1,500 feet between small cells
Monterey, California	The city denied Verizon’s application for a small cell tower to be placed in a residential area
Mason, Ohio	Passed an ordinance prohibiting small cells within 100 feet of a residential dwelling
San Rafael, California	Passed an ordinance establishes a 500-foot setback from residential districts and 500-foot separation between small cell wireless facilities

³¹ <https://www.letemps.ch/suisse/geneve-adopte-une-motion-un-moratoire-5g>

³² <https://www.thelocal.ch/20190729/swiss-5g-rollout-slowed-as-opponents-fight-antenna-plans>

³³ <https://www.ad.nl/tech/kamer-wil-eerst-stralingsonderzoek-dan-pas-5g-netwerk~ab567cd6/>

³⁴ <http://bit.ly/OasiSana-5G>

³⁵ <https://www.counterpunch.org/2019/06/11/prime-minister-of-poland-signs-global-appeal-to-stop-5g/>

³⁶ <https://ehtrust.org/usa-city-ordinances-to-limit-and-control-wireless-facilities-small-cells-in-rights-of-ways/>

This backlash can take many forms, including marching in the street, joining a local activist group, and signing a petition. Do what feels right for you on a collective level.

For a list of organizations that are working to bring awareness about 5G and stop 5G at a local and national level, see: www.electricsense.com/bookbonus.

Remember, this is not just about saying NO to 5G. It also means saying NO to antennas being added in front of your home for 5G and existing 3G and 4G LTE technologies.

Take Action On A Personal Level

In terms of your home and work environment, you can and must take your EMF protection to another level.

It might seem that 5G is a juggernaut that's going to slowly crush us all, but hopefully you are beginning to realize to what extent the power is in your hands to determine just how much (or how little) 5G, the IoT and everything "smart" are going to impact your health.

There is a lot of fear around 5G—take action instead of being fearful!

The good news is that much of what I've laid out above is not going to happen tomorrow. 5G is being rolled out, but the frequencies and technology being used currently, including in the low-to-mid-range, are akin to what is already being used now with 3G and 4G LTE.

There are two phases in the 5G roll-out:³⁷

Phase	Frequency	Implementation
1	Below 6 GHz	Now
2	6 GHz to 80 GHz	Underway in test cities worldwide

The exact frequencies being used in each phase depends upon where you live in the world. Different countries are using different frequencies.³⁸ BUT no matter where you live, currently phase one is the primary activity being introduced. Phase one uses the same frequencies that are being currently used for 3G and 4G LTE. These are in the low-band range of 600 MHz to 2 GHz, and the mid-band range of 2 GHz to 6 GHz.

5G Action Plan

Your best 5G action plan is to:

³⁷ <https://www.rfpage.com/what-are-5g-frequency-bands/>

³⁸ According to Oram Miller, for the foreseeable future cell carriers in North America will use frequencies from 600 MHz to 6 GHz, and from 24 GHz to roughly 39 GHz (with plans to use 60 GHz and higher frequencies in coming years).

1. Do everything you can NOW to protect yourself from phase one AND the other EMFs I've talked about so far in this guide
2. Be part of the collective movement at the local, national and international level to raise awareness and stop 5G, including stopping more cell antennas being added for existing 4G LTE technology.

Focus on phase one.

EMF exposures are cumulative. The problem is not just the magnetic fields from wiring errors on your electrical wiring, or the electric fields in your bedroom, or the radio frequency radiation from your router, cell phone, tablet, laptop or cordless phone, or your car. It's ALL these exposures.

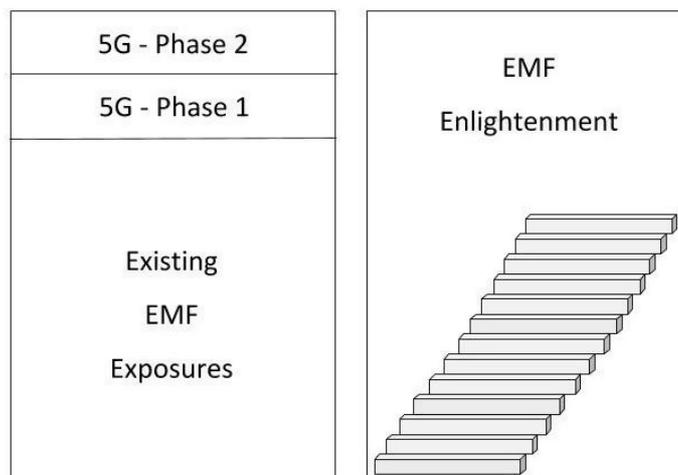
Dealing with all these exposures will put you in a VERY strong position if and when phase two is introduced in your neighborhood.

There's something else I want to say. 5G does represent a new spectrum of dangers being introduced into our lives, but in some ways it's a good thing. It might sound like a topsy-turvy thing to say, but people who never would have realized their cell phone or their Wi-Fi could be dangerous are now talking about 5G. There is a growing awareness.

This WILL lead us into a new age of EMF enlightenment. As you start making changes to your life that reduce your EMF exposure, this will have a filter-down effect on the people around you. As a result, friends, family, and work colleagues will be brought into the conversation.

The best way to protect yourself from 5G phase One is to apply as many of the EMF protection strategies and tips I've laid out in this guide.

As and if 5G phase two is rolled out where you live (and hopefully as the message of this book is spread, we can keep it from ever being fully rolled out), you'll discover new ways to protect yourself and your family.



The Saving Grace Of 5G

According to the Building Biology Institute,³⁹ another particularity of 5G is that numerous engineers say that 5G transmitters using beam-formed technology in the mmW band above 20 GHz will only emit a signal when a cell phone initiates a connection. That makes it essentially on-demand.^{40 41}

Secondly, the beam from a 5G antenna that is sending data is quite focused, somewhere between 2 and 15 degrees wide, not 120 degrees as with always-on, stronger 4G LTE signals. So, the 5G antennas would NOT be constantly transmitting as is currently the case with existing 3G and 4G LTE. This would seem to be a saving grace in so far as 5G goes, at least in your home, *if* you don't bring technology into your home that will draw that narrow, beam-formed signal right in through the walls and windows, such as a 5G-enabled cell phone.⁴²

You will be able to shield your home from 5G signals in the mmW band above 20 GHz with materials that also work in the low-to-mid-band ranges, such as RF-shielding paint and building foil.⁴³

But the other materials successfully used in the low-to-mid-band range, like mesh and fabric, are not expected to work as well in the mmW high-band range above 20 GHz.

The third important point is that 5G mmW, because of the high costs involved in its deployment in mmWave band, will primarily impact urban areas and to a lesser extent suburban areas. It is unlikely to impact rural areas away from towns.⁴⁴

Measuring 5G in the mmW band above 20 GHz may not be possible for a while with affordable meters. However, existing RF meters will still be able to measure 4G LTE transmitters on new small cell antennas, along with 4G transmitters when they are upgraded to 5G in the low-to-mid bands, because they measure in these bands already.

Activists believe the vast expansion of always-on 4G LTE and Wi-Fi antennas close to homes in residential neighborhoods to be as much of a health risk as 5G beam-formed signals.⁴⁵

Given that these always-on 3G and 4G LTE technologies use frequencies in the range which we can easily measure and shield, this is all the more reason to focus on dealing with these new and existing 4G LTE exposures and frequencies in the low-to-mid-band as best we can.

Fiber Optic—A Safer Alternative To 5G

³⁹ <https://buildingbiologyinstitute.org/free-fact-sheets/5g-understanding-the-technology-protection-strategies/>

⁴⁰ This is at least true if you are away from dense urban areas, where beam-formed 5G signals will primarily be deployed and where the environment will be saturated with beam-formed 5G signals.

⁴¹ 5G small cell antennas have been found to emit a very weak "reference SSB" signal to look for consumer units (cell phones) in their service are (information related to me by Oram Miller).

⁴² That includes new 4G/5G hybrid cell phones, which are on the market now, 5G-enabled fixed wireless Consumer Equipment Units (CEUs) for new Internet service from cell companies, and new 5G-enabled routers and smart speakers.

⁴³ According to information related to me by Building Biologist Oram Miller.

⁴⁴ People that are EHS will be able to seek refuge in rural areas because rural areas will likely only have enhanced 4G in the low-to-mid-band and not the full-fledged 5G in the mmWave band.

⁴⁵ <https://buildingbiologyinstitute.org/free-fact-sheets/5g-understanding-the-technology-protection-strategies/>

Despite the current push for 5G and wireless generally, fiber optic⁴⁶ is in so many ways the better choice. First and foremost, it's safer because fiber-optic cables use light instead of current (EMFs) to transmit data.

Many broadband services marketed as “fiber” are only part fiber. They use fiber to the cabinet in your street, and then switch to copper cabling to your property. Full fiber is the safest and fastest.

Full fiber optic is generally low EMF.

But fiber optic systems, through their power supplies and operation, can generate EMFs that piggyback on the copper cable and phone lines into our homes. This can be resolved in various ways, for instance by disconnecting these existing cable and telephone lines from the cable provider.⁴⁷

Fiber optics offer:

- Better stability
- Larger data quantities and speed
- Easier service to upgrade.

But the big advantages of wireless are its cost and ease of deployment.

Microwave does not have high costs in running fiber cables down the pavement or a busy road. Deployment is quick and microwave can access environments where there are hills, mountains and buildings, assuming good line of sight and availability of licensed spectrum from the relevant government body. Users can be online within a week or so, even before planning for road closures has begun for its fiber foe.⁴⁸

But given that, ultimately, we all want more, more, more and faster, faster, faster, fiber optics can give us this in generally a much safer way than wirelessly over the air.

Even conventional cable and telephone (DSL) wireline Internet services are generally faster than the fastest wireless, and fiber optics are way faster.⁴⁹

5G operators are talking of being able to provide above 1 Gbps—one billion bits per second—if and when they are able to push 5G through. Fiber optic cables have been proven to offer speeds of over 1Tbps (1 trillion bits per second), a thousand times faster.⁵⁰

Nearly 100 cities⁵¹ around the world are already saying yes to fiber optic broadband, including Chattanooga and Longmont in the US⁵² and more than two dozen cities in the UK.⁵³ The Science, Law & Public Policy Institute reports that the municipal fiber optic systems introduced in

⁴⁶ Also called Fiber To The Premises (FTTP).

⁴⁷ As reported by Jeromy Johnson, see <https://www.emfanalysis.com/fiber-optics-increasing-electrical-sensitivity/>

⁴⁸ <https://www.vostronet.com/blog/fibre-vs-microwave-the-future-of-fast-internet/>

⁴⁹ *Re-Inventing Wires: The Future of Landlines and Networks* by the National Institute for Science, Law & Public Policy Washington, DC.

⁵⁰ <https://www.dailydot.com/debug/fastest-internet-speed-ever-recorded/>

⁵¹ https://en.wikipedia.org/wiki/Fiber_to_the_premises_by_country

⁵² *Re-Inventing Wires: The Future of Landlines and Networks* by the National Institute for Science, Law & Public Policy Washington, DC.

⁵³ <https://www.cityfibre.com/gigabit-cities/>

Chattanooga as “exemplar of a successful municipal broadband fiber ‘Network’ and a real boost to the local economy”.

5G is not a done deal. The continued deployment of 3G and 4G technologies is not inevitable. If 5G does come to pass, it will be through our individual action—in particular, spending money on telecom products—and collective inaction. Meaning, we will have let it happen. Start participating in initiatives on a collective and community level to say no to 5G and take action to enhance your personal EMF protection.

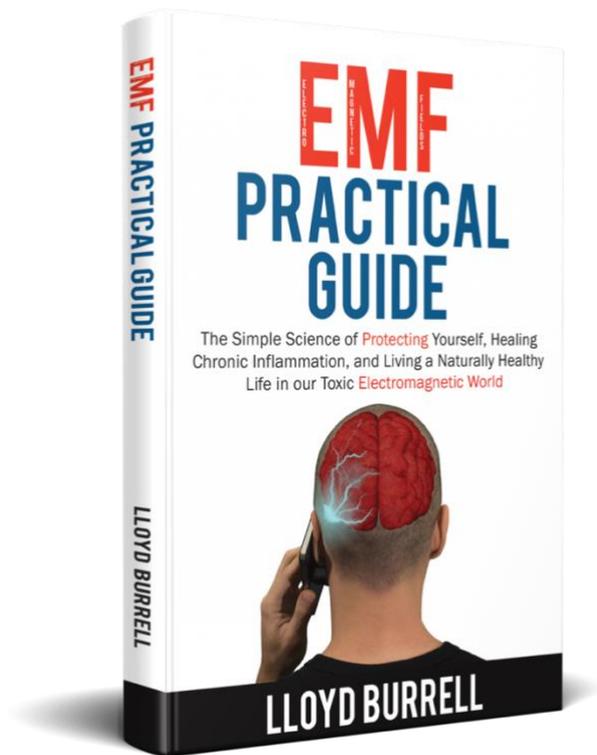
Here’s a summary of what you need to retain from this chapter:

- 5G is the latest generation of cellular technology. It promises to deliver more data, quicker data, and way faster downloads than previously available
- 5G goes hand in hand with the Internet of Things (IoT), which will connect billions of objects, taking us into a world of unprecedented global digital connectivity
- 5G proposes to bring 3G, 4G LTE, Wi-Fi and new 5G antennas closer to people through millions of small cell antennas dotted around neighborhoods, known as antenna densification
- 5G will first be rolled out in dense urban neighborhoods and in certain suburban neighborhoods
- 5G technology has not been safety tested (and there are no plans to do so!)—and yet, studies point to a number of adverse health effects
- Some experts fear it is a much bigger threat to our health than existing EMF exposures
- There are reports that 5G and the IoT will be used to spy on you, that your personal data will be used by intelligence agencies and shared with private companies so they can profile you
- Ultimately, 5G is about creating more demand to sell more devices, so big corporations can make more money
- Dozens of cities and states around the world are putting the brakes on 5G—get involved at a local and/or national level to let your voice be heard
- In terms of your home and work environment, you can and must take your EMF protection to another level
- It’s possible that the expansion of always-on 3G, 4G and Wi-Fi small cell antennas close to homes may be as much of a health risk as 5G beam-formed signals
- Fiber optics are generally a much safer technology than wireless and should be endorsed.

Find out more about my EMF Practical Guide

The Simple Science of Protecting Yourself, Healing Chronic Inflammation, and Living a Naturally Health Life In Our Toxic Electromagnetic World

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