

# 5G is Not the Cause of COVID-19

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I am a wireless telecom consultant, and have been since 1992. If you want, you can believe that the fact that my income comes from the wireless industry disqualifies me from commenting. Or perhaps, that my expertise is helpful. I have no financial relationship with any company making 5G equipment, although in full disclosure, I was engaged as an expert witness by Huawei around 2011, but that was before much 4G equipment was available, and 5G was still a dream. And an expert witness is ideally not an exponent of the position of a company, and I like to believe I am an ideal expert witness.

## 5G is Not a Well Defined Concept

5G is a set of goals defined by the ITU, not a specific technology. The most obvious goal is that wireless devices should be able to receive data at the fantastic speed of 1Gbps or even higher. This can be achieved by satellites, large towers, or tiny little boxes sitting on the ceiling of an office, or on the wall of a building outside. There are a wide range of frequencies being planned for use although it is true that a lot of 5G systems are planning to use higher frequencies than 4G.

## Confusing 5G with GHz and Gbps

A lot of critics of 5G seem to be terribly confused by the letter G. Is this the fault of telecom engineers who over-used the letter, or of the critics who couldn't be bothered to spend an hour researching and writing down the definitions? Let's straighten that out now:

- The "G" in 5G stands for "Generation". 1G was analog communications, 2G was early digital with SMS but no data, 3G provided the first data systems, 4G provided a data-only system, with voice treated as just one type of data, and 5G will provide even higher speeds and other advantages.
- The "G" in GHz stands for one billion (Giga) and references the frequency of the communications. Cellular communications started at 400-900 MHz (Mega = one million) in the 1980s, or just under 1GHz. PCS in the 1990s moved communications up to 2GHz. Some 4G communications are at frequencies as high as 3.5GHz, and 5G is talking about going up to 60GHz. But a lot is still just talk.
- The "G" in Gbps also stands for one billion, but this is referencing data speed. In the days of modems people talked about kbps (thousands of bits per second). With DSL and ethernet, Mbps (millions of bits per seconds), and now we are in the realm of Gbps (billions of bits per seconds).

## Explaining What Does Not Need to Be Explained

5G in Wuhan is an explanation for a surge of deaths that might be imaginary. I have still seen no

evidence that this city of 11 million people actually was experiencing a surge of deaths. First, bring the evidence that there was a dramatic increase, otherwise there is nothing that needs to be explained by 5G or any other theory about the root cause.

## Other Explanations for Increased Deaths

It has become clear that in Italy and in other parts of Europe, there is an increase in death rates. We know this because the Europeans provide near real-time mortality statistics. But there are other explanations than 5G or the virus, such as:

- Just as with SARS, doctors are aggressively treating people on the basis of the positive test, including intubation, steroids, antiviral drugs, and other unproven medications. We will likely find evidence of serious harm afterwards.
- Doctors are intubating people because of fear of infection via leaky oxygen masks. This is really malpractice, treating the patient for the benefit of the medical staff, rather than for the benefit of the patient. And the fear was found to be unfounded with SARS.
- Isolating old, frail people from their family, and even from nurses, who are now hidden behind PPE, is likely to hasten their demise.
- People are being told to stay away from the ER, or are deciding for themselves, based on fear of the virus. So, when some people do get really sick, they will show up at the hospital in much worse shape, and may even die unnecessarily.
- Lombardy in Italy, their epicentre, is one of the most polluted parts of Europe. This problem also occurs in Wuhan. Air pollution is not a constant, but gets better and worse as weather conditions change. And an increase in air pollution could explain some deaths.
- Patients whose deaths were blamed on COVID-19, particularly in Italy, are extremely old (average age 80) and infirm. Of the first 2,003 deaths examined almost half had 3 or more pre-existing health conditions and only 3 deaths were in people with none. China, with a much younger population, also shows above average ages for those diagnosed with illness and, particularly, with deaths. They are the most vulnerable to increases in air pollution and aggressive treatment.
- Most people who were very sick or died had one or more pre-existing health conditions. Almost half of the first 2,003 deaths in Italy had 3 or more pre-existing health conditions. The average number in the UK was 2.7. In New York, a survey of 5700 hospitalized COVID-19 patients showed that 89% had two or more pre-existing health conditions.

## What is EMF?

Electro-magnetic fields, or electro-magnetic radiation, are vibrations that naturally occur at a wide variety of frequencies. The highest frequency (most rapid vibrations) are Gamma Rays, followed by X Rays, Ultraviolet light, the visible light spectrum from violet down to red, and then the radio or microwave spectrum. Clearly the greatest damage comes from the highest frequencies, and radio and microwave have the lowest frequencies, so on this basis, should have the lowest impact. Even visible light has much higher frequencies than radio waves, and we are bathed in it all the time, although with enough energy, that too can be damaging as any sunburned person can attest (although most of the damage probably comes from the invisible ultraviolet).

Energy of EMF is also found in the amplitude of the wave (how high the wave is as opposed to how far apart the peaks are). It is true that even radio/microwaves can have a lot of energy with high amplitude waves. This means that a microwave oven, operating at high power, would cause

massive damage to the human body (which is why it shuts off automatically when the door is opened). By comparison, cellphones operate at a tiny fraction, usually 1/10,000th or 1/100,000th of the energy of a microwave oven.

So, any EMF can be damaging if the amount of energy in the wave is high enough.

## Is EMF Radiation?

Radiation is usually thought of as the damaging types of radiation coming from nuclear bombs, power plants or nuclear waste. This is more properly called ionizing radiation. Radiation itself just means any energy, whether waves like EMF, or energetic particles, that travels through space. Generally it spreads out with distance, hence the name radiation.

The highest frequency forms of EMF, Gamma Rays and X Rays, are ionizing, and thus can permanently alter atoms by removing electrons. Lower frequency forms, from Ultraviolet down to radio waves, cannot do this.

## Can Microwave Emissions Cook Your Brain?

Almost the entire range of wireless communications that we are familiar with – cellular, WiFi, 3G, 4G, 5G, PCS, LTE, GSM – falls into the microwave range, which extends from 300 MHz (0.3GHz) to 300 GHz. But to conclude from this that our brains are going to be fried or, rather, microwaved, is an absurdity.

Modern wireless devices usually transmit at less than 1 Watt of power, whereas microwave ovens operate at 600-1200 Watts. Not only that, but wireless communications tries to minimize transmit power. A recent paper found that wireless devices in rural areas generally operated at about 2% of peak power, and in more urban areas at about 1%. In terms of watts, 0.01 to 0.02 watts. Network transmitters (towers) transmit at higher power, but the power level is calculated so that what is received by your phone (and therefore may be absorbed by your body) is at the lowest power level that will provide error free communication.

The main reason for wireless devices to use the lowest possible power may be surprising. Obviously the power bill of the phone companies is reduced if they transmit to devices at the lowest feasible power. And the battery life of your phone, is only as good as it is, because of tight power management. But the real reason is interference. If there are many devices simultaneously transmitting, using the lowest possible power (i.e. the lowest that allows communications without excessive errors that could garble transmissions) then you have less interference between communications, and can get more users on the system, and therefore make more money.

To say that long exposure to power levels that are thousands of times lower than a microwave oven will eventually cook your brain, is like saying that a cook in a restaurant, who can feel the heat (infrared EMF) from an oven while working, will eventually get cooked by that oven. It is an absurdity. This is not to say that there should be no precautions for engineers and technicians who work in high RF emission environments, nor that 5G antennas should be arranged without minimizing human exposure, nor that government regulators should not limit the maximum power of devices that will be close to the human head. There are also concerns with certain high frequencies resonating with functions in the human body. This is also worth investigating.

## 5G Cannot Explain Patterns of Death

5G is currently in the early stages, and there are only relatively small installations. At the higher frequencies the radius of transmission of one cell is quite small, measured in tens or hundreds of meters (yards) rather than in kilometers or miles, as for a standard cellular tower. This means that 5G will cover dense pedestrian areas at first, then move into indoor applications, such as shopping malls. It will be a long time before higher frequencies covers highways, suburban areas and rural areas.

The people who are dying, supposedly from coronavirus, are generally old and infirm, and are the least likely people to be strolling through a pedestrian zone in a city. They are almost certainly mobility impaired, and thus staying close to home, where they are very unlikely to have 5G coverage.

## A Plea for Informed Skepticism

It is important to be skeptical, because in this world we are lied to all the time. But alternative stories are not always accurate even if you know that the mainstream story is wrong. It is important, when faced with an explanation for a phenomenon to first verify that the phenomenon is occurring, and then decide what data is required to verify the reasonableness of this new theory. In the case of coronavirus in Wuhan, there are many questions that need to be asked about the 5G theory, including whether there is a surplus of deaths, were the victims in Wuhan more likely to be exposed to 5G than others, whether 5G installations occur in all other places where the coronavirus is supposedly attacking, whether severe damage from low levels of radio frequency energy is plausible, and so on.

There is an unfortunate tendency among people who are skeptical of the mainstream (medicine or other areas) to unskeptically believe any theory that is implicitly critical of the mainstream. Substituting fear of an imaginary virus for fear of a new technology, is not informed skepticism.

On a personal note I find it bizarre that people will praise my coronavirus article because it is so careful to base each point on a simple interpretation of a medical paper, government document, newspaper article etc, and then after having explained how the coronavirus panic is happening, people ignore everything that I said, and revert back to 5G as a simplistic explanation for a phenomenon that might not even be happening. Another characteristic of my work is that I will mention contrary findings when they are relevant, yet what I have seen is that even scientific proponents of damage from radio waves only mention research that is favorable to their position.

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