

Chapter 7

pp. 78-82
from

5G: Great risk for EU, U.S. and International Health!

*Compelling Evidence for Eight Distinct Types of Great Harm
Caused by Electromagnetic Field (EMF) Exposures
and
the Mechanism that Causes Them*

<https://multerland.files.wordpress.com/2019/03/eu-emf2018-6-11us3.pdf>

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Chapter 7

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The Great Risks of 5G

**What We Know
and
What We Don't Know**

Chapter 7: The Great Risks of 5G: What We Know and What We Don't Know

We have already discussed two issues that are essential to understanding 5G.

1. One is that pulsed EMFs are, in most cases, much more biologically active than are non-pulsed (often called 79 continuous wave) EMFs.

2. A second is that the EMFs act by putting forces on the voltage sensor of the VGCCs (https://www.wikiwand.com/en/Voltage-gated_calcium_channel), opening these calcium channels and allowing excessive calcium ions to flow into the cell. The voltage sensor is extraordinarily sensitive to those electrical forces, such that the safety guidelines are allowing us to be exposed to EMFs that are something like 7.2 million times too high.

-Frequencies, pulsations, phased arrays, millimeter waves-

The reason that the industry has decided to go to the extremely high frequencies of 5G is that with such extremely high frequencies, it is possible to carry much more information via much more pulsation than it is possible to carry with lower frequencies even in the microwave range.

We can be assured, therefore, that 5G will involve vastly more pulsation than do EMFs that we are currently exposed to. It follows from that, that any biological safety test of 5G must use the very rapid pulsations including what ever very short term spikes may be present, that are to be present in genuine 5G.

There is an additional process that is planned to be used in 5G: phased arrays (https://en.wikipedia.org/wiki/Phased_array). Here multiple antenna elements act together to produce highly pulsed fields which are designed for 5G, to produce increased penetration. 5G will entail particularly powerful pulsations to be used, which may, therefore, be particularly hazardous. The only data we have, to my knowledge, on millimeter wave frequencies of 5G used non-pulsed EMFs in the millimeter frequency range of 5G, not genuine 5G.

Such millimeter waves have been shown to produce a number of downstream effects of VGCC activation. One millimeter wave study showed that it activated both the VGCCs and also the voltage-gated potassium channels, suggesting that it worked via the voltage sensor, as do other EMFs [136]

[136]Alekseev SI, Ziskin MC. 1999 *Effects of millimeter waves on ionic currents of Lymnaea neurons. Bioelectromagnetics 20:24-33.*

-Shocking views on 5G by EU and US-

Any such data tells us almost nothing about how *biologically* active genuine very highly pulsed 5G will be.

I take it that from their statements, that both Mr. Ryan and Dr. Vinciūnas are ready to put out 10s of millions of 5G antennae to afflict every single person in the EU with 5G radiation without even a single biological test of safety of genuine 5G.

In the U.S., the FCC has taken a much worse position. The FCC is not only willing to allow such completely untested exposures but has also been aggressively pushing to promote installation of 5G antennae, such that antennae are already being installed in parts of the U.S. In a world where shocking behavior has become less and less shocking, I consider EU and U.S. views and actions to be shocking.

-US: Mass insanity-

The U.S. situation is mass insanity. I would have hoped that the Europeans, who think of themselves as being much more thoughtful than Americans, would have been genuinely more thoughtful.

-Why does 5G need such high numbers of antennae?-

It is because the 5G radiation is much more absorbed as it enters various materials. The approach is to use many more antennae with one found every few houses, such that 5G can sufficiently penetrate local walls. Such absorption usually involves the interaction with electrically charged groups, such that such high absorption is likely to involve placing forces on electrically charged groups. Because such forces are the way in which EMFs activate the VGCCs, it seems highly likely, therefore, that 5G radiation will be particularly active in VGCC activation.

-5G Dangers-

In summary, then, 5G is predicted to be particularly dangerous for each of four different reasons:

1. The extraordinarily high numbers of antennae that are planned.
2. The very high energy outputs which will be used to ensure penetration.
3. The extraordinarily high pulsation levels.
4. The apparent high level interactions of the 5G frequency on charged groups presumably including the voltage sensor charged groups.

-Argues of the telecom industry-

Now what the telecommunications industry argues is that 5G radiation will be mostly absorbed in the outer 1 or 2 mm of the body, such that they claim that we don't have to worry about the effects. There is some truth to that, but there are also some caveats that make any conclusions made from that, much more suspect.

In any case, these surface effects of 5G will have especially strong impact on organisms with much higher surface to volume ratios.

-Dr. Martin L. Pall on 5G-

Consequently,

1. I predict that many organisms will be much more impacted than we will. This includes insects and other arthropods, birds and small mammals and amphibia. It includes plants including even large trees, because trees have leaves and reproductive organs that are highly exposed.
2. I predict there will be major ecological disasters as a consequence of 5G. This will include vast conflagrations because EMF exposures make plants much more flammable.

But let's get back to humans.

-Claims of the industry-

The industry has also made claims that more conventional microwave frequency EMFs are **limited** in effect to the outer 1 cm of the body. **We know that is not true**, however because of the effects deep in the human brain, on the heart and on hormone systems.

-Professor Hässig: important two studies-

Perhaps the most important two studies demonstrating effects deep within the body are the studies of Professor Hässig and his colleagues in Switzerland on cataract formation in newborn calves

[137,138].

[137] Hässig M, Jud F, Naegeli H, Kupper J, Spiess BM. 2009 *Prevalence of nuclear cataract in Swiss veal calves and its possible association with mobile telephone antenna base stations. Schweiz Arch Tierheilkd 151:471-478.*

[138] Hässig M, Jud F, Spiess B. 2012 *[Increased occurrence of nuclear cataract in the calf after erection of a mobile phone base station]. Schweiz Arch Tierheilkd 154:82-86.*

These two studies clearly show that when pregnant cows are grazing near mobile phone base stations (also called cell phone towers), the calves are born with very greatly increased incidences of cataracts. It follows from these findings that even though the developing fetuses are very deep in the body of the mother and should be highly protected from the EMF exposures, they are not so protected. And because the EMF safety guidelines in Switzerland are 100 times more stringent than are the safety guidelines in most of the rest of Europe, in the U.S., Canada and most of the rest of the world, the more general safety guidelines allow greatly excessive exposures and penetration of effects.

-The claims of industry are false-

The claims of industry that microwave frequency EMFs only act in the outer centimeter of the body are clearly **false**.

How then can both conventional microwave frequency EMFs and 5G radiation act deeply within the body? You may correctly observe that the electrical effects of the EMFs activate the voltage sensor and that the direct electrical forces are rapidly attenuated in the body.

So how can we get deep effects? I think the answer is that the magnetic parts of the EMFs have been known for decades to penetrate much more deeply than do the electrical parts. The magnetic fields put forces on mobile electrically charged groups dissolved in the aqueous phases of the body and small individual movements of the charged groups can regenerate electric fields that are essentially identical to the electric fields of the original EMFs, carrying the same frequency and same pulsation pattern, although with lower intensity.

An example of this is given in the Lu and Ueno [139]

[139] Lu M, Ueno S. 2013 *Calculating the induced electromagnetic fields in real human heads by deep transcranial magnetic stimulation. 35th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Book Series. Osaka Japan, pp. 795-798.*

study. Because the voltage sensor is so stunningly sensitive to electrical forces and part of the reason for that is the very high level of amplification of the electrical field across the plasma membrane, we have an almost perfect way in which to produce EMF effects deeply within our bodies.

-Dr. Martin L. Pall: I am very concerned-

I am very concerned that 5G may produce effects like those we already see produced from lower frequency EMFs but are much more severe.

I am also concerned that we will also see responses that are qualitatively different.

Let me give you three possible examples of the latter type and one quantitative example:

1. Each of the four types of blindness, have downstream effects of VGCC activation as causal factors: cataracts, detached retinas, glaucoma and macular degeneration. The aqueous and vitreous humors in the eye may be an ideal environment for the regeneration of the electrical fields within the eye. We may, therefore have a gigantic epidemic of each of the four types of blindness.

2. Another concern focuses on kidney dysfunction, which was shown in Chapter 5 to be impacted by EMFs. The kidneys have much fluid, both blood and also what will become urine, which may allow efficient the regeneration of electrical fields. Such regeneration may be expected to impact both the glomerular filtration and also the reabsorption, both essential to kidney function. Does this mean that 5G will produce very large increases in kidney failure? The only way to find out is to do biological safety testing of genuine 5G radiation.

3. Let me give you a third example. Fetuses and very young babies have much more water in their bodies than do 81adults. Therefore, they may be a special risk for impacts of 5G, because of great increases in the regeneration of the electrical fields. Here one can think of all kinds of possibilities. Let me suggest two. We may have a gigantic (sorry about using that word again) epidemic of spontaneous abortion due the teratogenic effects. Another possibility is that instead of autism being one birth in 38, however horrendous that is, it could be one out of two, or even a majority of births. I don't know that these will happen, but these are the kinds of risks we are taking and there are many others one can think of.

-5G: the stupidest idea in the history of the world-

Putting in tens of millions of 5G antennae without a single biological test of safety has got to be about the stupidest idea anyone has had in the history of the world. This brings us back to the earlier point.

-5G safety testing-

The only way to do 5G safety testing is to do genuine 5G biological safety testing. I have published on how this can be done relatively easily at relatively low cost and have, as you saw in the Chapter 6, told the FCC how this can be done.

Those tests must be done by organizations *completely independent of industry* and that *leaves out both ICNIRP and SCENIHR* and a lot of other organizations.

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European Union / European Commission and 5G

Now we will get into the precautionary principle which is specially relevant to the EU but may have lessons for all of us.

Dr. Vinciūnas' last full paragraph reads as follows:

“The recourse to the EU’s precautionary principle to stop distribution of 5G products appears too drastic a measure. We need first to see how this technology will be applied and how the scientific evidence will evolve. Please be assured that the Commission will keep abreast of the scientific evidence in view of safeguarding the health of European citizens at the highest level possible and in line with its mandate.”

Article 191 defines the Precautionary Principle as follows:

“According to the European Commission the precautionary principle may be invoked when a phenomenon, product or process may have a dangerous effect, identified by a scientific and objective evaluation, if this evaluation does not allow the risk to be determined with sufficient certainty. Recourse to the principle belongs in the general framework of risk analysis (which, besides risk evaluation, includes risk management and risk communication), and more particularly in the context of risk management which corresponds to the decision-making phase.

The Commission stresses that the precautionary principle may only be invoked in the event of a potential risk and that it can never justify arbitrary decisions. The precautionary principle may only be invoked when the three preliminary conditions are met:

1. identification of potentially adverse effects;
2. evaluation of the scientific data available;
3. the extent of scientific uncertainty.”

The question now is what about 5G?

We have with 5G strong suspicions of similar or much more severe risk of effects documented elsewhere in this document.

We have no biological safety testing of genuine 5G radiation.

Therefore, we have no risk analysis or risk management because we have no risk assessment whatsoever on 5G. So here we have Dr. Vinciūnas arguing that the request for precautionary principle application is premature. But it is not the request for the use of the precautionary principle that is premature, it is the Commission’s claim that it has done the required risk analysis and risk assessment. This is the bizarre world that we live in.

The European Commission has done nothing to protect European citizens from the very serious health hazards and the U.S. FDA, EPA and National Cancer Institute

have done nothing to protect U.S.citizens.

The U.S. FCC has been worse than that, acting in want on disregard for our health. Let me close, as follows. There have been certain points in our history where people have stood up to strong destructive forces against what often appeared to be insurmountable odds.

Those people are THE most honored people in our history. The people who failed to do so are among the most despised people in our history. I am not at all sure we will have historians to record us 100 years from now or even 30 years from now, given the direction in which we are heading. But if we do, rest assured that these are the standards by which we will all be judged.

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