

All of the safety guidelines are based on average intensities, averaged over 6 minutes or 30 minutes and in which the allowable levels are based in specific absorption rates (SAR).

Any defender of the 5G rollout based on “safety guidelines” needs to be asked the following questions:

1. What is the rationale for using average intensities over 6 minutes when we KNOW that nanosecond pulses can produce effects when they occur over times that are  $10^9$  to  $10^{12}$  times shorter than 6 minutes, effects that are not predicted by safety guidelines?
2. What is the rationale for using average intensities over any time period when we know, from 13 different published reviews, that pulsed EMFs usually produce, in most cases, much larger effects than do non-pulsed EMFs of the same average intensity?
3. What is the rationale for ignoring the issue of polarity when two nanosecond pulses within a few microseconds of each other produce supra-additive effects when they are of the same polarity but two such pulses of opposite polarity produce lower effects than the first pulse alone?
4. What is the rationale for calculating average intensities as if they were scalars when it has been known for approximately 200 years that EMFs are vectors rather than scalars and cannot, therefore, be so averaged?
5. What is the rationale for basing safety guidelines strictly on physics when we know that different types of cells, when exposed by particular research groups to a specific type of EMF and effects are measured using a particular methodology, show very different responses to those EMF exposures?
6. What is the rationale for using SAR to set allowable levels when SAR only allow us to predict heating, not any other sort of effect?
7. What is the rationale for pretending that EMF effects are linear or at least monotone, when we have exposure windows that produce maximum effects but lower or higher exposures produce much lower effects?
8. What is the rationale for ignoring frequency windows, where highly specific frequencies produce effects at many orders of magnitude lower exposures than do other, nearby frequencies?
9. What is the rationale for ignoring the voltage-gated calcium channel (VGCC) mechanism which is supported by both the biology and the physics?
10. What is the rationale for ignoring the stunning sensitivity of the VGCC voltage sensor to electric forces when the electrical forces on it are estimated to be about 7.2 million times stronger than the forces on singly charge groups in the aqueous parts of our cells and tissues. This is based on its known structure and location in the plasma membrane and based on Coulomb's law and Ohm's law.

11. Do you agree that the industry claim that 5G will only produce effect penetration limited to the outer millimeter of the body is clearly false, with penetration of effect being at least 20 times greater and if not, why not? How do you deal with the empirical evidence clearly showing vastly deeper effects than the industry claims is possible for millimeter waves?

12. Given that:

- 5G interacting with the “internet of things” is designed to be extraordinarily highly pulsed in order to communicate extraordinarily high amounts of information per unit time.
- And that we have 13 reviews clearly showing that pulsed EMFs are, in most cases much more biologically active than are non-pulsed EMFs of the same average intensities.
- And given the fact that nanosecond pulses produced effects which safety guidelines predict cannot occur.
- And given the fact that pairs of nanosecond pulses of identical polarity produce supra-additive effects which are again, safety guidelines predict cannot occur.
- What is the rationale for completely ignoring the role of pulsations in predicting 5G health impacts?

If an industry defender wants to argue that any of those findings are incorrect, then show us the evidence that they are incorrect.

When such a defender is done with that, then how does such a defender explain each of the nine effects documented to occur at levels well below safety guidelines, with each shown by 9 to 38 different reviews?

Some of the things that are discussed in the document that I sent are clearly particularly important for 5G, notably the issue of pulsations including single nanosecond pulses and paired nanosecond pulses. 5G is designed to be extraordinarily highly pulsed in order to carry very large amounts of information per second.

We have, in summary 12<sup>1</sup> different questions that such a defender needs to answer in order to have any scientific credibility. If the defender wishes to disagree with any position previously extensively documented in my recent safety guideline I statement, with essential extensive documentation of any such disagreement, then of course the defender is welcome to do so. If the defender fails to answer the questions or fails to extensively document any disagreement, then based on well-accepted principles of science, those safety guidelines are gone – they have been repeatedly falsified.

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1 Corrected from «21» which is evidently a typing error, by Einar Flydal, 13.8.2019

