

ICNIRP, 5G, Guidelines & Health

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What is the ICNIRP?

- Not-For-Profit Non-Governmental Organization in official relations with World Health Organization & International Labour Organization
- To develop and disseminate science-based advice on limiting exposure to non-ionizing radiation, including radiofrequency fields relevant to 5G
- Independent from industry (similar Conflict of Interest rules to WHO); members financial disclosures available at www.ICNIRP.org



How is 3G/4G/5G safety ensured?

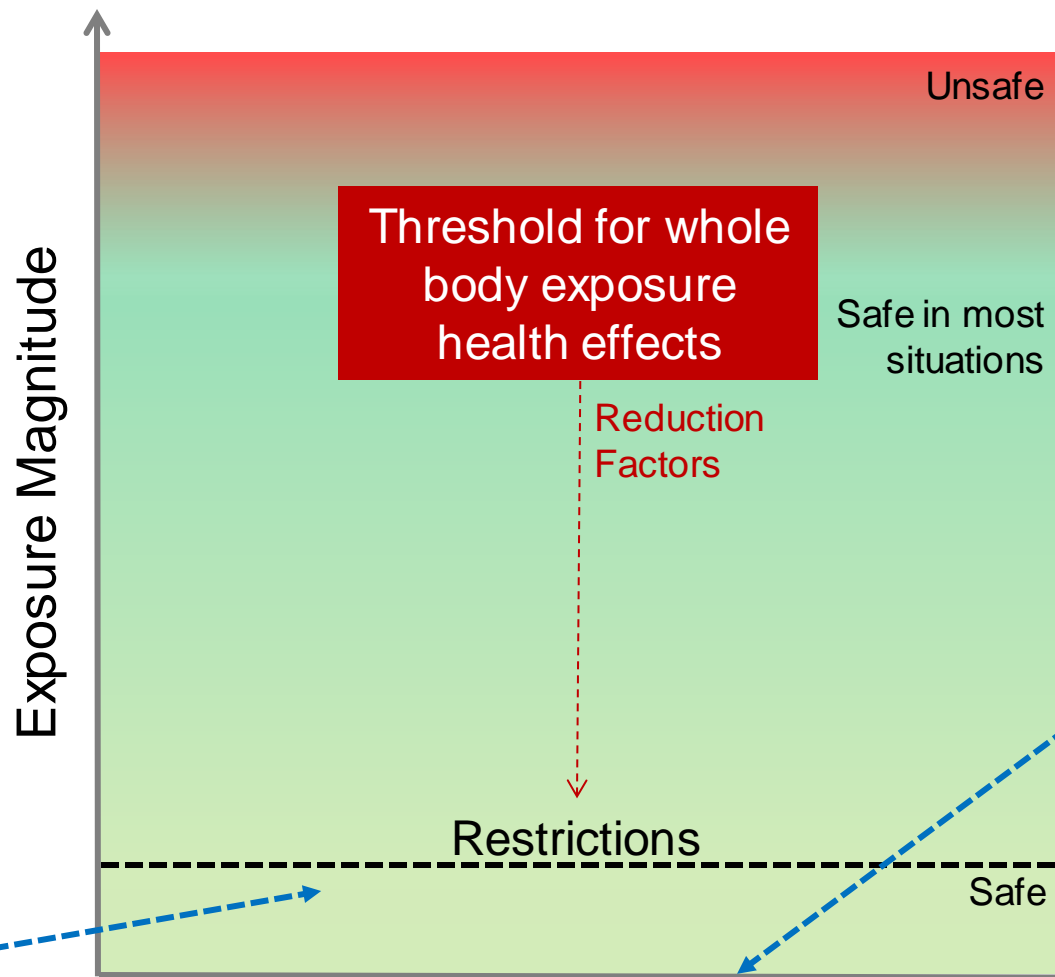
- ICNIRP Guidelines for limiting exposure to electromagnetic fields (100 kHz-300 GHz); Health Phys. 2020, 118(5):483-524
- Providing that exposure from 5G devices complies with the Guidelines, no harm will occur



How are restriction values determined?

- Identify lowest exposure level that can cause harm
 - e.g. 4 W/kg causes 1°C body core temperature rise
- Apply reduction factors to that exposure level to obtain safety restrictions
 - e.g. reduce 4 W/kg by a factor of 50 and set general public exposure restriction to 0.08 W/kg
 - this is too low to cause detectable increase in body core temperature





3G/4G/5G



Common misconceptions about the ICNIRP Guidelines

But what about...

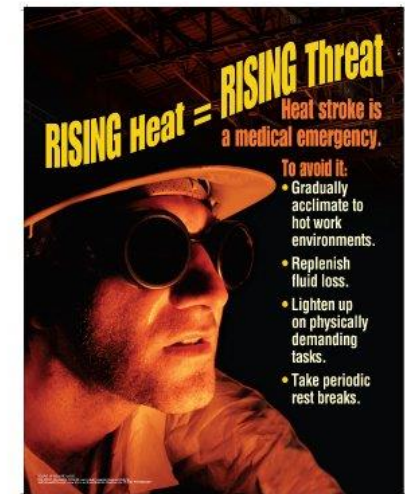
- “All this sounds good, **but what about** all the stories that I’ve heard in the media?”



The Independent, UK:
*Mobile phones “more
dangerous than smoking”*

But what about (#1)

- “the GDLs only protect against *thermal* effects”
 - all potential effects are considered; the GDLs specifically looked for ANY evidence of health effects, regardless of the mechanism
 - however, where a mechanism is known (such as *thermal*), this enabled us to use a larger body of science to ensure appropriate restrictions



But what about (#2)

- “but there is evidence that RF EMF causes diseases such as cancer”
 - although there are *reports* of this, the consensus is that there is no evidence of this (e.g. SSM 2015/16/17; SCENIHR 2015)

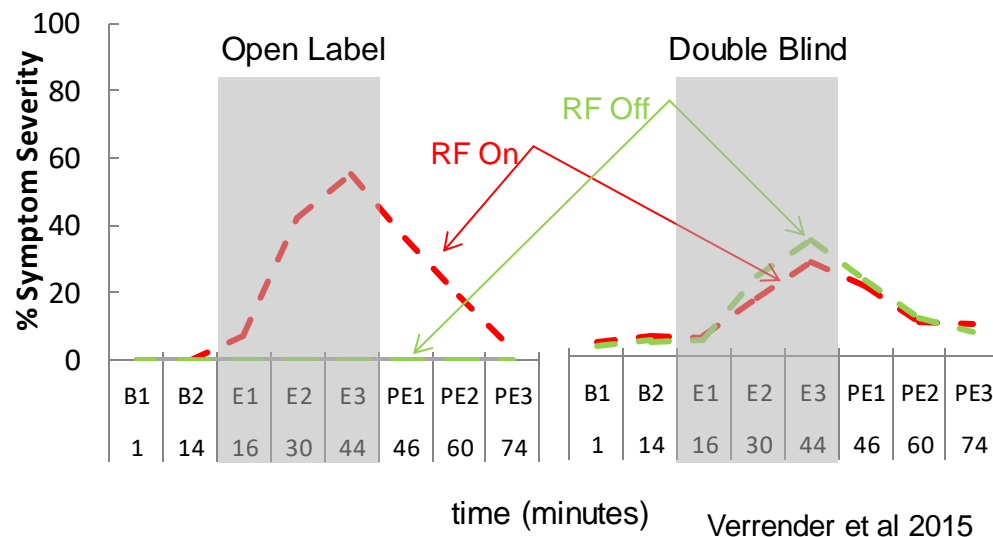


But what about (#3)

- “but the GDLs don’t protect *electro-hypersensitive people*”
 - GDLs provide protection, even for those **reporting** sensitivity to RF; however, there is no evidence that this is caused by RF
 - indeed, the only strong evidence coming out of this domain is that belief (and not exposure) is sufficient to cause symptoms



EHS sufferer in
“Better Call Saul”



But what about (#4)

- “but why do the GDLs ignore all those studies that show that RF causes harm?”
 - No research is ignored
 - Some excluded because not relevant (e.g. a biological effect without health consequence)
 - Some is not interpretable due to methodological limitations
 - Some has been shown to be incorrect (e.g. by failed replication attempts)
 - i.e. both ‘X’ and ‘NOT X’ cannot be true



But what about (#5)

- “but the GDLs only consider acute effects”
 - reports of both acute and chronic effects are considered; however there is no evidence supporting the claims that there are chronic effects (such as cancer)
 - by basing the restrictions on the only substantiated effects, protection is provided against ALL effects of RF EMF



But what about (#6)

- “but you CAN’T say it’s safe with *absolute certainty*!”
 - This is a big issue, that goes beyond ‘science’
 - What do we mean by ‘certainty’?



But what about (#6)

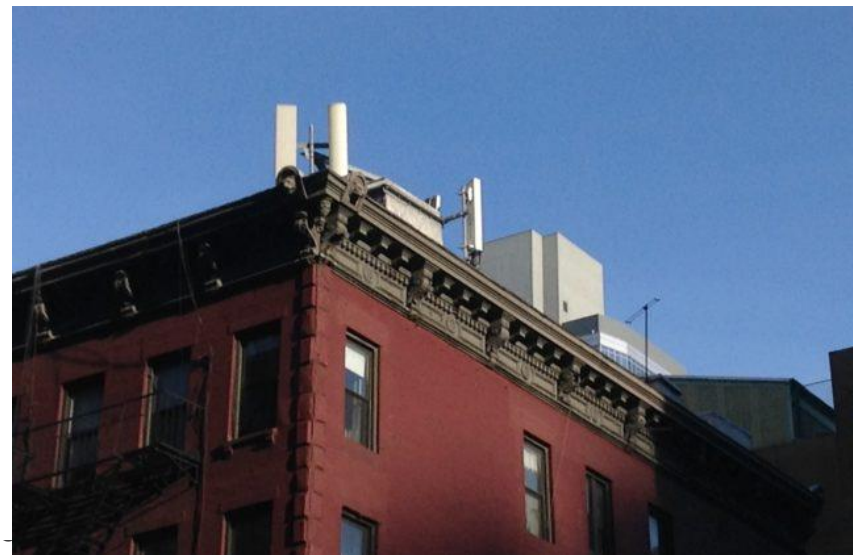
- Scientific certainty
 - Sufficient certainty to know that smoking causes cancer, certain vaccines reduce communicable disease risk, etc
 - This is the only useful interpretation of ‘certainty’

If this is what we are talking about, then it is appropriate to say that we are certain that 5G exposure will not cause harm



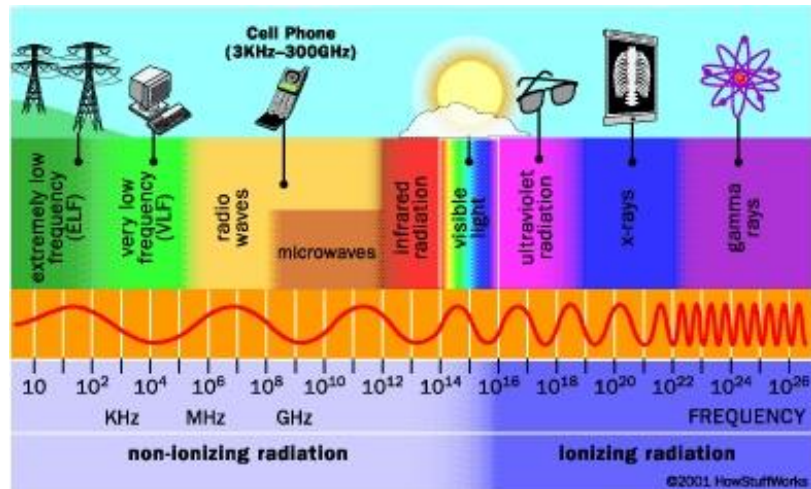
But what about (#7)

- “but they want to put a cell tower on top of my building, surely *that* can't be safe!”
 - again, so long as exposure is within the GDLs, there will be no health effects from this
 - aesthetics is another matter...



But what about (#8)

- “but 5G is new and there is no research on that!”
 - This is a misunderstanding of how science works
 - The name that we give a technology is not relevant to safety
 - What is relevant is the physical agent (the electromagnetic field), and we understand this very well



WE WOULDN'T WANT TO IGNORE THE WARNING ON A CIGARETTE PACKET JUST BECAUSE IT WAS A NEW STRAIN OF TOBACCO THAT HADN'T, ITSELF, BEEN TESTED!!!