

Presentation to Bermuda Council Thurs 19 Nov 1: 20 pm (Fri 3:20 am Brisbane time 20 Nov). This is my text that I will read and I will provide a few slides.

Thank you for allowing me to present at your information session today. My name is Victor Leach¹, I am a retired radiation health physicist and have worked in the field of radiation protection for the last 48 years. (slide 1)

Most of my colleagues in radiation health are busy with jobs relating specifically to ionising radiation (X-rays, Gamma Rays etc.) and have not really taken the time to look at the potential effects of this wireless radiation. The consequence of their lack of understanding is that they just accept the ICNIRP guidelines as being correct. For the last 5 years I have been presenting papers at the Australasian Radiation Protection Society Conferences trying to wake my colleagues up to the fact that we have a problem. After my presentations many of my colleagues are saying to me “that they had not really looked into the ICNIRP guidelines but now see there might be a problem”.

About 5 years ago we formed a not-for-profit professional organisation called Oceania Radiofrequency Scientific Advisory Association (ORSAA) with a view to investigate the science and to fund necessary research to plug the gaps in knowledge. ORSAA receives no funds from industry so we have no vested interest in this wireless technology. Our aim is to protect health and to educate. At the start of my journey, over a decade ago, I was quite sceptical that these weak wireless signals could have detrimental health implications. Together with my associates at ORSAA, we decided to setup a publicly accessible, non-biased database (slide 2), to assist with the review of the science. At the start of this data gathering process I decided that if the studies looking at biological and health effects showed 50% “Effects due to wireless” and 50% “No Effects due to wireless” then I would not pursue this subject any further.

To assist in this review process, we decided to start looking at the existing experimental science, in more detail. The available databases at the time like “pubmed” and “emf portal” were not categorised in terms of bio-effect outcomes and contained papers on electrocution, medical ablation etc. which we felt were not relevant to this subject area because they often operate above public limits in a controlled manner. We unanimously decided to create a specialised bio-effects database² that specifically focused on non-thermal effect research. These are effects of wireless on biological systems that are not due to heating, but due to other electromagnetic effects from wireless such as changing the way that positive and negative charges are distributed within molecules, and thereby unravelling proteins. These effects occur at much lower levels than the ICNIRP guidelines. ICNIRP ignores these non-thermal effects as not having any health implications.

¹ On slide: You can read my CV at

https://www.orsaa.org/uploads/6/7/7/9/67791943/mr_vic_leach.pdf

² On slide: ORSAA Database: https://n431.fmphost.com/fmi/webd#Research_Review_V4

We have written a number of scientific papers based on our database findings and have recently presented to the Australian 5G parliamentary inquiry³. Our submissions are publicly available and can be downloaded from our website⁴. This 5G inquiry was not about health. However, over 95% of the submissions focused on health concerns. Health concerns were allotted 5% of the available speaking time and were not really addressed. Thus, the 5G inquiry seemed like a set up to promote the industry.

The most important finding from the ORSAA database⁵ shows that when real mobile phone signals are used in experimental studies they are much more bio-active than when simulated signals are used. Slide 3 These man-made signals from mobile phones and towers are completely foreign to our bodies. These highly variable and complex modulated wireless signals that can penetrate deep into the body. Unlike natural primordial radionuclides, ionising radiation for example Radium in soil (Ra-226), Potassium-40 in our bones etc.) we have not evolved with wireless signals.

Non-thermal bio-effects Slide 4 and 5

- Structural and functional changes of the brain
- Increased oxidative stress (cellular stress)
- DNA damage (this is a precursor for cancer)
- Tumour promotion and tumour initiating characteristics
- US National Toxicology Program and Ramazzini Institute animal studies show RF to be carcinogenic. ICNIRP and industry are using spin to diminish the importance of these findings. I recommend that you read the NTP's lead designer's rebuttal of ICNIRP's claims to get a clearer picture⁶. This YouTube video is worth watching⁷
- Neurodegeneration (brain cell loss)
- Altered neurotransmitter levels
- Blood brain barrier (BBB) breaches
- Cognitive function impairment
- Developmental impacts
- Mitochondrial dysfunction (cell energy dysfunction)
- Increases in blood glucose level
- Damage to Sperm and ovum leading to fertility and potentially congenital/developmental issues
- Cardiovascular disease
- Hormonal changes
- Immune system dysfunction

³ https://www.aph.gov.au/Parliamentary_Business/Committees/House/Communications/5G

⁴ <https://www.orsaa.org/5g-inquiry.html>

⁵ ORSAA paper title "A novel database of bio-effects from non-ionizing radiation"
<https://www.ncbi.nlm.nih.gov/pubmed/29874195>

Table 3: Number of bio-effect Mobile phone studies with Signal Type and Wave-form

⁶ Commentary on the utility of the National Toxicology Program study on cell phone radiofrequency radiation data for assessing human health risks despite unfounded criticisms aimed at minimizing the findings of adverse health effects. R.L. Melnick. <https://www.ncbi.nlm.nih.gov/pubmed/30243215>

⁷ <https://www.youtube.com/watch?v=nJfK3gbkmMk&feature=youtu.be&t=3>

How anyone can dismiss these bio-effects as not having implications on health is irresponsible and beyond me?

These high frequency wave forms carry low frequency data that a number of studies show challenge an organism's natural defences, in some cases leading to dysfunction and disease. This is particularly true for children, unwell people and older citizens as wireless radiation is another stressing agent that our bodies have to deal with.

I completely disagree with many Government agencies that support the ICNIRP approach.

- ICNIRP claims that 5G is completely safe. Governments agencies compare 5G to airport scanners and police radar speed guns as a way to demonstrate that this technology is safe. This is a false comparison. One is intermittent exposure while 5G can potentially be a 24/7 exposure. Also, the 5G signal complexity is nothing like airport scanners or radar speed gun. Of course, if one chooses to dig a little deeper, there is a study showing radar speed guns being linked to testicular cancer.
- The claim is that premarket testing is not required because this is just "New Wireless". This gives the impression that 5G waves are just an extension of AM/FM radio. Again this is a false comparison.
- The latest ICNIRP guideline claims to protect everyone no matter what their health status which is a radical departure from their 2002 philosophy statement. To claim all people are protected is scientifically baseless and unsubstantiated. Where are the studies? ICNIRP have removed the statement in their previous guideline that said: *"Different groups in a population may have differences in their ability to tolerate a particular NIR exposure. For example, children, the elderly, and some chronically ill people might have a lower tolerance for one or more forms of NIR exposure than the rest of the population. Under such circumstances, it may be useful or necessary to develop separate guideline levels for different groups within the general population, but it may be more effective to adjust the guidelines for the general population to include such groups."* I ask on what basis this was dropped.
- ICNIRP believe that all non-thermal effects have no health implications. The science I have outlined in this presentation does not support that view. Slide 6
- ICNIRP is a self-appointed non-government agency who act like a cartel because their membership process is a closed club of thermal effect scientists. Members of this club set up the WHO EMF project group in order to help legitimize their "heating effects only" viewpoint. Unlike the WHO International Agency for Research on Cancer (IARC), both ICNIRP and the
- WHO EMF project have very little input from the biological and medical sciences. IARC vet membership of this WHO committee very carefully to ensure no conflict of interest. Science should be democratic with many views-points discussed.

- 5G in the later phases of rollout will use phased array systems. This will mean beams of RF radiation will follow you as you walk down the street. Industry friendly “heat only” scientists have warned of possible excessive heating of skin.
- ICNIRP state that No Precautionary approach is required, because precaution is built into their guidelines I completely disagree, they have not used any risk management methods for setting their guidelines.
- The International Telecommunication Union pointed out in May 2018 (2 years ago) that they had a problem with the current ICNIRP guidelines in several countries where the restriction on levels were lower such as China, India, Poland, Russia, Italy and Switzerland, regions of Belgium or cities such as Paris. Slide 7 The ICNIRP solution was to relax the new guidelines, that is, to make the permitted levels higher.
- ICNIRP Guidelines are designed to protect humans only from shock and burns associated with acute thermal exposures. There is absolutely no consideration given to the greater environment and its inhabitants. Current ICNIRP limits provide no confidence in protecting insect and animal populations as we change their environment. We have been progressively changing their environment by blanketing it with wireless coverage. Now 5G will add to their physical stress. The wavelength of these higher frequency so called mmWaves is the same length as insect bodies, that will therefore maximally absorb the energy from 5G signals. Without healthy pollinators, how will our food supply be guaranteed?
- Now we have smart fridges, coffee grinders, tooth brushes, diapers (baby nappies) etc. What’s the long-term plan? 5G to enable my fridge to talk to my toaster? Are charging electric cars wirelessly a priority over human health? Where is the consumer advice?
- When are health protection agencies going to look at the biocompatibility of these signals and act responsibly by limiting exposure and using optimisation and precautionary philosophies that are being used successfully in ionising radiation protection?