

# 5G WIRELESS: A Radiobiological Assessment

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## Abstract

Professor Yuri G. Grigoriev (PhD, DMedSci), an independent Oceania Radiofrequency Scientific Advisory Association (ORSAA) advisor, has been a vocal critic of the ICNIRP approach in the setting of exposure limits for RF-EMF guidelines. ORSAA has also been highly critical of the ICNIRP philosophical approach to setting these limits and believes ICNIRP's approach represents a move away from the ICRP ethical approach.

Professor Yuri Grigoriev was a giant in the science of Radiobiology in Russia and recently published a book (titled: 5G CELLULAR STANDARDS. Total Radiobiological Assessment of the Danger of Planetary Electromagnetic Radiation Exposure to the Population). Grigoriev's breadth and depth of understanding of the interactions between biology and physics should not be ignored by governments, telecommunications engineers, or social scientists charged with responsible decision-making in this matter.

Soviet radiobiological scientists and clinicians were amongst the first to realise the therapeutic and detrimental effects of millimetre Waves (mmWaves), which is documented in a significant body of scientific literature spanning many decades. The findings were very clear in the 1970s that pulsed modulated low frequency signals on mmWaves, although having shallow penetration in the skin, can lead to a variety of bioeffects that over the longer-term will result in health effects particularly amongst the most vulnerable, including children, the infirm and the aged.

It is necessary to assess the degree of radiosensitivity of various organs and their interaction with the biological systems of the body. These vital organs develop over the course of our lives and should be considered when setting safety standards. This is necessary to assess potential adverse reactions in important organs such as the brain, the visual and auditory systems, the vestibular system, the thyroid gland, the sclera of the eyes, the endocrine system, the reproductive system and the immune system. The study of the effects of long-term or chronic radiation exposure, such as benign and malignant tumors, is particularly important for assessing the risk of all forms of EMF. We urgently need specialized research to assess the degree of danger of cellular communication for children and those individuals who have other health issues. It is important to establish a scientific basis for developing ethical radiation protection standards that are optimised with appropriate "safety factors" to address unknown and emerging factors related to health impacts, as well as possible future technological developments.

## Key Words

Electromagnetic Radiation, EMR, EME, EMF, RF, Microwaves, Wi-Fi, Mobile phones, Health, Cancer, millimetre Waves (mmWaves)