



Biological and health effects of non-ionizing radiation that is used by 5G

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Adverse health effects of radiofrequency radiation (RF) from mobile communication including cancer risks and reproductive impacts have been reported, while some studies did not find such effects [1]. Complex dependence of the non-thermal RF effects on various physical and biological variables, such as carrier frequency, polarization, modulation, intermittence, electromagnetic stray fields, genotype, physiological traits, and cell density during exposure account for an apparent inconsistency in the published data [2]. Health effects of 5G mobile communication, which, in addition to 2G - 4G signals, uses also millimeter waves (MMW), are of significant public concern. It follows from available studies that RF in general and MMW in particular, at very low intensities below the ICNIRP guidelines can induce biological effects and affect human health. We have shown that MMW inhibited repair of DNA damage induced by ionizing radiation under exposure at specific frequencies and polarizations [3]. Fundamental role of MMW in regulation of homeostasis was postulated by H. Fröhlich [4] and confirmed in many studies [2]. Available studies, together with almost complete absence of MMW in atmosphere due to effective absorption, which suggests the lack of adaptation to this type of radiation, suggest that the health effects of chronic MMW exposures may be more significant than for any other frequency range. The data showing dependence of RF/MMW effects on static and extremely low frequency magnetic fields suggested a strategy for reducing health effects from RF/MMW of mobile communication.

References

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