Recent scientific publications relevant to mobile telephony

March 2013

Details

Canada: Intense THz pulses cause H2AX phosphorylation and activate DNA damage response in human skin tissue, Titova et al., *Biomedical Optics Express*, 4(4):559-568, 2013.

> *'...exposure to intense THz pulses for ten minutes leads to a significant induction of H2AX phosphorylation, indicating that THz pulse irradiation may cause DNA damage in exposed skin tissue. At the same time, we find a THz-pulse-induced increase in the levels of several proteins responsible for cell-cycle regulation and tumor suppression, suggesting that DNA damage repair mechanisms are quickly activated...'*

China: Exposure to 1800 MHz radiofrequency electromagnetic radiation induces oxidative DNA base damage in a mouse spermatocyte-derived cell line, Liu et al., *Toxicology Letters*, 218(1):2-9, 27 March 2013.

> *'...these findings may imply the novel possibility that RF-EMR with insufficient energy for the direct induction of DNA strand breaks may produce genotoxicity through oxidative DNA base damage in male germ cells.'*

China: Slice-based supine-to-standing posture deformation for Chinese anatomical models and the dosimetric results with wide band frequency electromagnetic field exposure: simulation, Wu et al., *Radiation Protection Dosimetry,* 154(1):31-36, April 1, 2013.

> *'...the body level and the tissue/organ level differences are reported for plane wave and the 3T magnetic resonance imaging radiofrequency electromagnetic field exposure...'*

China: Cell Type-Dependent Induction of DNA Damage by 1800 MHz Radiofrequency Electromagnetic Fields Does Not Result in Significant Cellular Dysfunctions, Xu et al., *PLoS ONE*, 8(1):e54906, Published: January 23, 2013.

> *'...RF-EMF induces DNA damage in a cell type-dependent manner, but the elevated γH2AX foci formation in HSF cells does not result in significant cellular dysfunctions.'*

France: French general practitioners and electromagnetic fields, Lambrozo et al., *La Presse Médicale*, Available online 16 February 2013.

> *'...The GPs know the main EMF sources: cell phone towers, cell phones, power-lines, microwave ovens and WiFi networks. Patients mostly complain or worry about the first three sources and ask their GP for information about these. GPs themselves search for information in the mainstream media rather than in the usual scientific and medical press...'*

Global: Allergy and brain tumors in the INTERPHONE study: pooled results from Australia, Canada, France, Israel, and New Zealand, Turner et al., *Cancer Causes & Control*, 1-12, Published Online: 27 February 2013.

'...While allergy history might influence glioma, meningioma, and acoustic neuroma risk, the observed associations could be due to information or selection bias or reverse causality.'

Greece: Radiofrequency Exposure in Greek Indoor Environments, Markakis et al., *Health Physics,* 104(3):293-301, March 2013.

'...signals from mobile base stations are dominant in workplaces and schools, whereas wireless phones and computer networks play the leading role in home environments. While the former reach their maximum values during daytime, the latter have an observable increase in the evening after work hours.'

Russia: Exposure of Tumor-Bearing Mice to Extremely High-Frequency Electromagnetic Radiation Modifies the Composition of Fatty Acids in Thymocytes and Tumor Tissue, Gapeyev et al., *International Journal of Radiation Biology*, Posted online on March 13, 2013.

'...The recovery of the FA composition in thymocytes and the modification of the FA composition in the tumor under the influence of EHF EMR on tumor-bearing animals may have crucial importance for elucidating the mechanisms of antitumor effects of the electromagnetic radiation.'

Saudi Arabia: The acute auditory effects of exposure for 60 minutes to mobile's electromagnetic field, Alsanosi et al., *Saudi Medical Journal*, 34(2):142-146, February 2013.

'...Sixty minutes of close exposure to electromagnetic fields emitted by a mobile phone had an immediate effect on HTL assessed by pure-tone audiogram and inner ear (assessed by DPOAE) in young human subjects. It also caused a number of other otologic symptoms.'

Switzerland: Stimulation of the brain with radiofrequency electromagnetic field pulses affects sleep-dependent performance improvement, Lustenberger et al., *Brain Stimulation*, Available online 24 February 2013.

'...changes in the time course of SWA during the exposure night may reflect an interaction of RF EMF with the renormalization of cortical excitability during sleep, with a negative impact on sleep-dependent performance improvement.'

Switzerland: No increased sensitivity in brain activity of adolescents exposed to mobile phone-like emissions, Loughran et al., *Clinical Neurophysiology*, Available online 18 February 2013.

'...the current study was unable to demonstrate exposure-related effects previously observed on the waking EEG in adults, and also provides further support for a lack of an influence of mobile phone-like exposure on cognitive performance...'

USA: A World Awash with Wireless Devices: Radio-Frequency Exposure Issues, Foster, *IEEE Microwave Magazine*, 14(2):73-84, March-April 2013.

'…Decades of research on social determinants of risk show that social factors, in addition to technological ones, influence an individual's response to a perceived risk. RF enabled devices raise difficult issues in risk communication because of the involuntary aspects of exposure to many concerned individuals…'

USA: High-resolution simulations of the thermophysiological effects of human exposure to 100 MHz RF energy, Nelson et al., *Physics in Medicine and Biology*, 58(6):1947-1968, 21 March 2013.

'...maximum hypothalamic temperature increase over the course of a 45 min exposure was 0.28 °C and occurred in the most extreme conditions (T amb = 31 °C, PD = 8 mW cm -2). Skin temperature increases attributable to RF exposure were modest, with the exception of a 'hot spot' in the vicinity of the ankle where skin temperatures exceeded 39 °C...'

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The GSM Association (GSMA) is the global trade association that exists to promote, protect and enhance the interests of GSM mobile operators throughout the world. www.gsma.com/mobile-and-health

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