



Recent scientific publications relevant to mobile telephony

## July 2013

### Details

**Belgium:** Comparison of Temporal Realistic Telecommunication Base Station Exposure with Worst-Case Estimation in Two Countries, [Mahfouz et al., Radiation Protection Dosimetry](#), Published online: June 14, 2013.

*'...worst-case exposure assessment overestimates realistic maximal exposure up to 5.7 dB for the considered example. In France, the values are the highest, because of the higher population density. The results for the maximal realistic extrapolation factor at the weekdays are similar to those from weekend days.'*

**Belgium:** Assessment of outdoor radiofrequency electromagnetic field exposure through hotspot localization using kriging-based sequential sampling, [Aerts et al., Environmental Research](#), Available online 5 June 2013.

*'...validation of the subsequent surrogate models shows high prediction accuracy, with the final model featuring an average relative error of less than 2 dB (factor 1.26 in electric-field strength), a correlation coefficient of 0.7, and a specificity of 0.96.'*

**Brazil:** Effect of 950 MHz UHF Electromagnetic radiation on biomarkers of oxidative damage, metabolism of UFA and antioxidants in the liver of young rats of different ages, [Furtado Filho et al., International Journal of Radiation Biology](#), Posted online on June 21, 2013.

*'...950 MHz UHF EMR does not cause Oxidative Stress (OS), and it is not genotoxic to the livers of neonates or those of 6 and 15 day old rats, but it changes the concentrations of polyunsaturated fatty acid (PUFA) in neonates...'*

**China:** Impairment of long-term potentiation induction is essential for the disruption of spatial memory after microwave exposure, [Wang et al., International Journal of Radiation Biology](#), Posted online on June 21, 2013.

*'...This study suggested that impairment of LTP induction and the damages of hippocampal structure, especially changes of synapses, might contribute to cognitive impairment after microwave exposure.'*

**Denmark:** Mobile Phone Use and the Risk of Skin Cancer: A Nationwide Cohort Study in Denmark, [Poulsen et al., American Journal of Epidemiology](#), Published Online: June 20, 2013.

*'...We observed no overall increased risk for basal cell carcinoma, squamous cell carcinoma, or melanoma of the head and neck. After a follow-up period of at least 13 years, the IRRs for basal cell carcinoma and squamous cell carcinoma remained near unity...'*

**France:** Multi-sensors SAR system for real-time dosimetry assessment, [Person et al., Comptes Rendus Physique](#), 14(5):425-437, May 2013.

*'...the proposed one does not require any displacement, thus reducing drastically acquisition time, once parallel data acquisition and interpolation techniques are employed for accelerating measurements.'*

**Germany:** Genotoxic effects of exposure to radiofrequency electromagnetic fields (RF-EMF) in HL-60 cells are not reproducible, [Speit et al., Mutation Research/Genetic Toxicology and Environmental Mutagenesis](#), Available online 28 June 2013.

*'...Comet-assay experiments and micronucleus tests were performed under the same experimental conditions that had led to genotoxic effects in the REFLEX study. Here we report that the attempts to reproduce the induction of genotoxic effects by RF-EMF in HL-60 cells failed. No genotoxic effects of RF-EMF were measured in the repeat experiments. We could not find an explanation for the conflicting results. However, the negative repeat experiments suggest that the biological significance of genotoxic effects of RF-EMF reported by the REFLEX study should be re-assessed.'*

**Greece:** Evaluation of Specific Absorption Rate as a Dosimetric Quantity for Electromagnetic Fields Bioeffects, [Panagopoulos et al., PLoS ONE](#), 8(6):e62663, Published: June 4, 2013.

*'...Radiation/field intensity along with additional physical parameters (such as frequency, modulation etc) which can be directly and in any case more accurately measured on the surface of biological tissues, should constitute the primary measure for EMF exposures, in spite of similar uncertainty to predict the biological effect due to non-linearity...'*

**Hungary:** Effect of a single 30 min UMTS mobile phone-like exposure on the thermal pain threshold of young healthy volunteers, [Vecsei et al., Bioelectromagnetics](#), Published online: 20 June 2013.

*'...pioneering information about human pain sensation in relation to RF EMF exposure and thus may contribute to cover the existing gap between safety research and applied biomedical science targeting the potential biological effects of environmental RF EMFs.'*

**Italy:** Effect of Bluetooth headset and mobile phone electromagnetic fields on the human auditory nerve, [Mandala et al., Laryngoscope](#), Published online: 25 April 2013.

*'...The outcomes of the present study show that, contrary to the finding that the latency and amplitude of CNAPs are very sensitive to EMFs produced by the tested mobile phone, the EMFs produced by a common Bluetooth device do not induce any significant change in cochlear nerve activity...'*

**Saudi Arabia:** Assessment of oxidant/antioxidant status in saliva of cell phone users, [Khalil et al., Electromagnetic Biology and Medicine](#), Posted online on June 19, 2013.

*'...These findings suggest that there is no relationship between exposure to radio frequency radiation (RFR) and changes in the salivary oxidant/antioxidant profile.'*

**Sweden:** Metric properties and normative data for brief noise and electromagnetic field sensitivity scales, [Nordin et al., Scandinavian Journal of Public Health](#), Published online: February 12, 2013.

*'...favorable metric properties of the NSS-11 and EMFSS-11 in combination with their fast usage suggest that they are particularly useful for assessment in epidemiological studies, and have the advantage of available normative data.'*

**Sweden:** Meningioma patients diagnosed 2007--2009 and the association with use of mobile and cordless phones: a case--control study, [Carlberg et al., \*Environmental Health\*](#), 12(1):60, Published: 19 July 2013.

*'...No conclusive evidence of an association between use of mobile and cordless phones and meningioma was found. An indication of increased risk was seen in the group with highest cumulative use but was not supported by statistically significant increasing risk with latency...'*

**Sweden:** Pooled analysis of case-control studies on acoustic neuroma diagnosed 1997-2003 and 2007-2009 and use of mobile and cordless phones, [Hardell et al., \*International Journal of Oncology\*](#), Published online on: Monday, July 22, 2013.

*'...Several of the calculations in the long latency category were based on low numbers of exposed cases... This study confirmed previous results demonstrating an association between mobile and cordless phone use and acoustic neuroma.'*

**Switzerland:** Field Evaluation of the Human Exposure From Multiband, Multisystem Mobile Phones, [Kuhn et al., \*IEEE Transactions on Electromagnetic Compatibility\*](#), 55(2):275-287, April 2013.

*'...The results show a small change of the mean output power in GSM mode (from -2 to -10 dB) compared to 30-dB power control dynamic range. The mean output power in UMTS was a factor <100 lower than GSM...'*

**UK:** Idiopathic Environmental Intolerance Attributed to Electromagnetic Fields: A Content Analysis of British Newspaper Reports, [Eldridge-Thomas et al., \*PLoS ONE\*](#), 8(6):e65713, Published: June 14, 2013.

*'...The widespread poor reporting we identified is disappointing and has the potential for to encourage more people to misattribute their symptoms to electromagnetic fields. Scientists should remain engaged with the media to counteract this effect.'*

**USA:** Adhoc electromagnetic compatibility testing of non-implantable medical devices and radio frequency identification, [Seidman et al., \*BioMedical Engineering OnLine\*](#), 12(1):71, Published: 11 July 2013.

*'...Testing confirms that RFID has the ability to interfere with critical medical equipment. Hospital staff should be aware of the potential for medical device EMI caused by RFID systems and should be encouraged to perform on-site RF immunity tests prior to RFID system deployment or prior to placing new medical devices in an RFID environment...'*

**USA:** Far-Field RF Powering of Implantable Devices: Safety Considerations, [Bercich et al., \*Biomedical Engineering, IEEE Transactions on\*](#), 60(8):2107-2112, August 2013.

*'...Safe powering conditions and peak received power levels are established using a simplified theoretical analysis and Federal Communications Commission-established limits for radiating antennas...'*

**USA:** Radiofrequency Energy Exposure from the Trilliant Smart Meter, [Foster et al., \*Health Physics\*](#), 105(2):177-186, August 2013.

*'...Limited measurements conducted in two houses with the meters were unable to clearly distinguish emissions from the meters from the considerable electromagnetic clutter in the same frequency range from other sources, including Wi-Fi routers and, when it was activated, a microwave oven...'*

**USA:** An Approach to Rapid Calculation of Temperature Change in Tissue Using Spatial Filters to Approximate Effects of Thermal Conduction, [Carluccio et al., IEEE Transactions on Biomedical Engineering](#), 60(6):1735-1741, June 2013.

*'...results of the proposed method are in reasonable agreement with those of the FD approach, with about 15% difference in the calculated maximum temperature increase, but are calculated in a fraction of the time, requiring less than 2% of the calculation time for the FD approach in the cases evaluated.'*

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