



Recent scientific publications relevant to mobile telephony

January 2013

Details

Belgium: Exposure assessment of mobile phone base station radiation in an outdoor environment using sequential surrogate modeling, [Aerts et al., *Bioelectromagnetics*](#), Published online 11 January 2013.

'...accurate GSM900 downlink outdoor exposure maps (for use in, e.g., governmental risk communication and epidemiological studies) are developed by combining the proven efficiency of sequential design with the speed of exposimeter measurements and their ease of handling.'

China: Induction of adaptive response in mice exposed to 900 MHz radiofrequency fields: Application of micronucleus assay, [Jiang et al., *Mutation Research/Genetic Toxicology and Environmental Mutagenesis*](#), Available online 4 January 2013.

'...pre-exposure of mice to non-ionizing RF is capable of 'protecting' the erythrocytes in the blood and bone marrow from genotoxic effects of subsequent γ -radiation...'

China: A large-scale measurement of electromagnetic fields near GSM base stations in Guangxi, China for risk communication, [Wu et al., *Radiation Protection Dosimetry*](#), Published online 23 November 2012.

'...the GSM band EMF level near the base stations is very low. The measurement results and the EMF risk communication procedures positively influence public perception of the RF EMF exposure from the base stations and promote the exchange of EMF exposure-related knowledge.'

China: In Vitro Dosimetry and Temperature Evaluations of a Typical Millimeter-Wave Aperture-Field Exposure Setup, [Jianxun, *IEEE Transactions on Microwave Theory and Techniques*](#), 60(11):3608-3622, November 2012.

'...exposure of 31.2-mW MMW results in an averaged SAR of 44.9 W/kg in cells, quantitatively compatible with the International Commission on Non-Ionizing Radiation Protection limits to the incident power density. 46.9% of the MMW power is efficiently absorbed and accumulates a maximum temperature rise of 0.12 degC in cells...'

Estonia: Effect of microwave radiation on human EEG at two different levels of exposure, [Suhhova et al., *Bioelectromagnetics*](#), Published online 31 December 2012.

'...decreasing the SAR 100 times reduced the related changes in the EEG three to six times and the number of affected subjects, but did not exclude the effect.'

France: Characterization of the Interactions Between a 60-GHz Antenna and the Human Body in an Off-Body Scenario, [Chahat et al., *IEEE Transactions on Antennas and Propagation*](#), 60(12):5958-5965, December 2012.

'...for the considered scenario the impact of the body on the antenna characteristics is almost negligible, and even relatively high radiated powers (up to 550 mW) result in exposure levels that are below international exposure limits.'

Germany: Terahertz Radiation at 0.380 THz and 2.520 THz Does Not Lead to DNA Damage in Skin Cells In Vitro, [Hintzsche et al., Radiation Research](#), 179(1):38-45, 2013/01/01.

'...The results of the present study are in agreement with findings from other studies investigating DNA damage as a consequence of exposure to the lower frequency range (<0.150 THz) and demonstrate for the first time that at higher frequencies (0.380 and 2.520 THz), nonionizing radiation does not induce genomic damage.'

Germany: Hypothesis on how to measure electromagnetic hypersensitivity, [Tuengler et al., Electromagnetic Biology and Medicine](#), Posted online 9 January 2013.

'...This paper addresses reasons why most provocation studies could not find any association between EMF exposure and EHS and presents a hypothesis on diagnosis and differentiation of this condition...'

Greece: Numerical modeling of heat and mass transfer in the human eye under millimeter wave exposure, [Karampatzakis et al., Bioelectromagnetics](#), Published online: 11 January 2013.

'...calculated maximum fluid velocity in the anterior chamber and the temperature rise at the corneal apex are reported for frequencies from 40 to 100 GHz and different values of incident power density.'

Japan: Performance and Validation of a Broadband- Multigeneration Exposure System for Unconstrained Rats, [Wang et al., IEEE Transactions on Microwave Theory and Techniques](#), 61(1):326-334, January 2013.

'...Using the stay frequency as a weighting factor, we derived the whole-body average SAR statistical characteristics for the multiple-frequency exposure system during the entire multigeneration experimental period...'

New Zealand: New Zealand adolescents' cellphone and cordless phone user-habits: are they at increased risk of brain tumours already?: a cross-sectional study, [Redmayne, Environmental Health](#), 12(1):5, Published: 10 January 2013.

'...Both cellphones and cordless phones were used by approximately 90% of students... cellphones were very popular for entertainment and social interaction via texting, cordless phones were most popular for calls...'

South Korea: Effects of simultaneous combined exposure to CDMA and WCDMA electromagnetic fields on serum hormone levels in rats, [Jin et al., Journal of Radiation Research](#), Published online 13 December 2012.

'...Exposure for 8 weeks to simultaneous CDMA and WCDMA RF did not affect serum levels in rats of melatonin, thyroid stimulating hormone (TSH), triiodothyronine (T3) and thyroxine (T4), adrenocorticotrophic hormone (ACTH) and sex hormones (testosterone and estrogen)...'

Sweden: Use of mobile phones and cordless phones is associated with increased risk for glioma and acoustic neuroma, [Hardell et al., Pathophysiology](#), Online 21 December 2012.

'...Some studies show increasing incidence of brain tumours whereas other studies do not. It is concluded that one should be careful using incidence data to dismiss results in analytical epidemiology...'

Turkey: Effect of 900 MHz radiofrequency radiation on oxidative stress In rat brain and serum, [Bilgici et al., Electromagnetic Biology and Medicine](#), Posted online on January 9, 2013.

'...there is a significant increase in brain lipid and protein oxidation after electromagnetic radiation (EMR) exposure and that garlic has a protective effect against this oxidative stress.'

Turkey: Effects of low level electromagnetic field exposure at 2.45 GHz on rat cornea, [Akar et al., International Journal of Radiation Biology](#), Posted online 3 December 2012.

'...Despite the fact that there was a relation between increased anterior epithelial area (AEA) and radiation exposure, no statistically significant relationship in area fraction of each compartment was found between the control and study groups...'

UK: The influence of high intensity terahertz radiation on mammalian cell adhesion, proliferation and differentiation, Rachel et al., [Physics in Medicine and Biology](#), 58(2):373, 21 January 2013.

'...The study demonstrated that there was no difference in any of these parameters between irradiated and control cell cultures...'

USA: A Study of RF Dosimetry from Exposure to an AMI Smart Meter, [Zhou et al., IEEE Antennas and Propagation Magazine](#), 54(6):69-80, December 2012.

'...When one accounts for the meter's true duty cycle or there was a realistic separation between the meter and an individual, all SAR values fell within safety limits.'

USA: Prenatal and Postnatal Cell Phone Exposures and Headaches in Children, [Sudan et al., The Open Pediatric Medicine Journal](#), 6):46-52, 2012.

'...cell phone exposures were associated with headaches in children, but the associations may not be causal given the potential for uncontrolled confounding and misclassification in observational studies such as this...'

USA: NMR imaging of cell phone radiation absorption in brain tissue, [Gultekin et al., Proceedings of the National Academy of Sciences](#), Published online 17 December 2012.

'...This proposed application of NMR thermometry offers sufficient spatial and temporal resolution to characterize the hot spots from absorbed cell phone radiation in aqueous media and biological tissues...'

USA: Combined biological and health effects of electromagnetic fields and other agents in the published literature, [Kostoff et al., Technological Forecasting and Social Change](#), Available online 11 January 2013.

'...community consensus does not exist on these potential effects, either beneficial or adverse, although there is substantial credible scientific evidence supporting the above effects...'

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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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