



Recent scientific publications relevant to mobile telephony

February 2008

Details

Australia: Banding carcinogenic risks in developed countries: A procedural basis for qualitative assessment, [Stewart, Mutation Research/Reviews in Mutation Research](#), 658(1-2):124-151, January-February 2008.

'...Situations allocated to the unlikely risk band principally involve certain consumer products. Overall, such risk assessment may be of greatest worth in focusing community attention on proven causes of cancer and associated preventive measures.'

Australia: Non-Thermal effects in the microwave induced unfolding of proteins observed by chaperone binding, [George et al., Bioelectromagnetics](#), Published online: 31 January 2008.

'...We show that microwaves cause a significantly higher degree of unfolding than conventional thermal stress for protein solutions heated to the same maximum temperature.'

China: Effects of GSM 1800 MHz on dendritic development of cultured hippo-campal neurons, [Ning et al., Acta Pharmacologica Sinica](#), 28 (12):1873-1880, December 2007.

'...These data indicate that the chronic exposure to 2.4 W/kg GSM 1800 MHz microwaves during the early developmental stage may affect dendritic development and the formation of excitatory synapses of hippocampal neurons in culture.'

Finland: Setup and dosimetry for exposing anaesthetised pigs in vivo to 900 MHz GSM mobile phone fields, [Toivonen et al., Bioelectromagnetics](#), Published Online: 4 Feb 2008.

'...The specific absorption rate (SAR), defined as a maximum average over 10 g tissue mass (SAR10g), was 7.3 W/kg for the first set of short bursts and 31 W/kg for the second set of short bursts. The SAR10g in the continuous 10-min exposure was 31 W/kg...'

Finland: Mobile phone radiation might alter protein expression in human skin, [Karinen et al., BMC Genomics](#), 9(77):11 February 2008.

'... This is the first study showing that molecular level changes might take place in human volunteers in response to exposure to RF-EMF. Our study confirms that proteomics screening approach can identify protein targets of RF-EMF in human volunteers.'

Finland: Occupational exposure to RF fields from base station antennas on rooftops, [Alanko et al., Annals of Telecommunications](#), Published Online: 15 Jan 2008.

'... The results indicate that the reference levels for workers and the general public may be exceeded in front of the transmitting antenna at distances up to 1 and 2 m, respectively.'

France: Evaluation of the SAR induced in a multilayer biological structure and comparison with SAR in homogeneous tissues, [Pradier et al., Annals of Telecommunications](#), Published Online: 31 Jan 2008.

'... reasonable positions of a handset in a body-worn configuration. The employed sources are half-wavelength dipoles placed at different distances from those structures and operating at frequencies between 300 MHz and 6 GHz.'

France: Specific absorption rate assessment near a base-station antenna (2,140 MHz): some key points, [Lacroux et al., Annals of Telecommunications](#), Published Online: 16 Jan 2008.

'...The primary goal is to analyze the relationship between the antenna input powers required to reach the specific absorption rate (SAR) limit and those ones which are required to reach the power density limit...'

France: Brief report: How do adolescents perceive the risks related to cell-phone use?, [Martha et al., Journal of Adolescence](#), 30(3):513-521 June 2007.

'...Results showed that adolescents have an acute perception of the risks associated with CPUWDriving and appeared to be concerned, as a whole, with social risks related to I-Incivility. They do not appear particularly concerned by the risks related to LIMRadiation, which may reflect societal confusion about risks still considered as hypothetical and/or based on equivocal evidence...'

France: High frequency (900 MHz) low amplitude (5 V m⁻¹) electromagnetic field: a genuine environmental stimulus that affects transcription, translation, calcium and energy charge in tomato, [Roux et al., Planta](#), 227(4):883-891, March, 2008.

'...These responses occur very soon after exposure, strongly suggesting that they are the direct consequence of application of radio-frequency fields and their similarities to wound responses strongly suggests that this radiation is perceived by plants as an injurious stimulus.'

Greece: Non-ionizing electromagnetic radiation monitoring in Greece, [Gotsis et al., Annals of Telecommunications](#), Published Online: 18 Jan 2008.

'...The measurement results indicate that the non-ionizing electromagnetic radiation levels are several times below the European Commission Recommendation 1999/519/EC and the Hellenic Republic Law no. 3431 reference levels.'

Hungary: Personal RF exposimetry in urban area, [Thuróczy et al., Annals of Telecommunications](#), Published Online: 29 Jan 2008.

'...The results from personal exposure showed that one third of the participants spent 40–70% of 24 h recording time above the detection limits (0.05 V/m), and half of subjects spent less than 10%. The highest exposure was detected during the traveling period and the lowest in bed at home...'

Italy: The interpretation of the results of the research on electromagnetic fields and health in Europe: the EC Coordination Action EMF-NET, [Ravazzani, Annals of Telecommunications](#), Published Online: 26 Jan 2008.

'...The coordination action EMF-NET, established by the European Commission in 2004, in the framework of the 6th EC Framework Programme, aims to produce the interpretation of the research results on electromagnetic field and health...'

Italy: The Italian national electromagnetic field monitoring network, [Troisi et al., Annals of Telecommunications](#), Published Online: 19 Jan 2008.

'...The paper describes the Italian national electromagnetic field monitoring network that the Italian Ministry of Communications established with the technical support of Fondazione Ugo Bordoni and in collaboration with the local Environmental Protection Agencies of all Italian regions.'

Italy: Knowledge and perceptions of the health effects of environmental hazards in the general population in Italy, [Bianco et al., International Journal of Hygiene and Environmental Health](#), Available online 5 November 2007.

'...Correct knowledge ranged from 98.4% of those who are aware that tobacco smoking is a risk factor for respiratory disease to 4.0% of those who know that there is no evidence of an increase of risk of childhood leukaemia in those living near mobile phones base stations...'

Japan: SAR characterization inside intracranial tumors for case-control epidemiological studies on cellular phones and RF exposure, [Varsier et al., Annals of Telecommunications](#), Published Online: 18 Jan 2008.

'... Three new exposure indices combining the duration and strength of exposure were created to be used in the Japanese epidemiological study on mobile phone use and the risk of gliomas and meningiomas.'

Japan: Mobile phone use, exposure to radiofrequency electromagnetic field, and brain tumour: a case-control study, [Takebayashi et al., British Journal of Cancer](#), 98(3):652-659, 5 February 2008.

'...the adjusted odds ratios (ORs) for regular mobile phone users being 1.22 (95% confidence interval (CI): 0.63-2.37) for glioma and 0.70 (0.42-1.16) for meningioma. When the maximal SAR value inside the tumour tissue was accounted for in the exposure indices, the overall OR was again not increased and there was no significant trend towards an increasing OR in relation to SAR-derived exposure indices...'

Norway: Is fertility reduced among men exposed to radiofrequency fields in the Norwegian Navy?, [Møllerløgkken et al., Bioelectromagnetics](#), Published Online: 31 January 2008.

'... This study shows a possible relationship between exposure to radiofrequency fields during work with radiofrequency equipment and radar and reduced fertility. However, the results must be interpreted with caution.'

South Korea: Mobile phone electromagnetic radiation activates MAPK signaling and regulates viability in *Drosophila*, [Lee et al., Bioelectromagnetics](#), Published Online: 19 February 2008.

*'...These findings demonstrate that the exposure limit on electromagnetic radiation proposed by ANSI triggered ERK-survival signaling but the strong electromagnetic radiation activated JNK-apoptotic signaling in *Drosophila*.'*

Sweden: Problems In Assessment Of Risks From Exposures To Microwaves Of Mobile Communication, [Belyaev et al., Radiatsionnaya biologiya. Radioekologiya](#), 47(6):S. 727-732, Noyabr'-Dekabr' 2007.

'... It has been shown that NT MW affect cells of various types including stem cells and reproductive organs. Stem cells represent especially important cellular model because recent data suggest that different cancer types, including leukemia, have a fundamentally common basis that is grounded on epigenetic changes in stem cells.'

UK: Emerging EMF technologies action on possible health risks, [McKinlay, Annals of Telecommunications](#), Published Online: 25 Jan 2008.

'...It facilitates identifying how existing technologies change, what entirely new applications and services are introduced, what impact these would have on the levels and spectral nature of EMF exposure of people and what potential health consequences might arise.'

UK: On the effects of straight metallic jewellery on the specific absorption rates resulting from face-illuminating radio communication devices at popular cellular frequencies, [Whittow et al., Physics in Medicine & Biology](#), 53(5):1167-1182 07 March 2008.

'...Although, the pins increased the SAR, the SAR standards were not breached and the jewellery produced lower values than those of previous studies when the source was positioned close to the ear.'

USA: Effect of cell phone usage on semen analysis in men attending infertility clinic: an observational study, [Agarwal et al., Fertility and Sterility](#), 89(1):124-128, January 2008.

'...Use of cell phones decrease the semen quality in men by decreasing the sperm count, motility, viability, and normal morphology. The decrease in sperm parameters was dependent on the duration of daily exposure to cell phones and independent of the initial semen quality.'

USA: Effects of 900-MHz Radio Frequencies on the Chemotaxis of Human Neutrophils *in Vitro*, [Aly et al., Biomedical Engineering, IEEE Transactions on](#), 55(2):795-797, February 2008.

'...The direction of motion changed from along the concentration gradient and the electrical field lines to motion at right angles to the concentration gradient and the electric field. The average time for the neutrophils to respond to the effect of RF radiation was about 2.5 min.'

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