



Recent scientific publications relevant to mobile telephony

July 2015

Details

Australia: Artificial Human Phantoms: Human Proxy in Testing Microwave Apparatuses That Have Electromagnetic Interaction with the Human Body, [Mobashsher et al., *IEEE Microwave Magazine*, 16\(6\):42-62, July 2015.](#)

'...Devices/ systems that rely on the human body electromagnetic field interactions require multiple tests/measurements under a controlled environment. This environment is needed to validate the performance in all the possible scenarios of operation and make sure of the safety of those devices and systems...'

Australia: International policy and advisory response regarding children's exposure to radio frequency electromagnetic fields (RF-EMF), [Redmayne, *Electromagnetic Biology and Medicine*](#), Posted online on June 19, 2015.

'...The wide range of policy approaches can be confusing for parents/carers of children. Some consensus among advisory organizations would be helpful acknowledging that, despite extensive research, the highly complex nature of both RF-EMF and the human body, and frequent technological updates, means simple assurance of long-term safety cannot be guaranteed...'

Belgium: Impact of a Small Cell on the RF-EMF Exposure in a Train, [Aerts et al., *International Journal of Environmental Research and Public Health*](#), 12(3):2639, Published: 27 February 2015.

'...We found that by connecting to a small cell, the brain exposure of the user could realistically be reduced by a factor 35 and the whole-body exposure by a factor 11...'

China: Cell Phone Generated Radio Frequency Electromagnetic Field Effects on the Locomotor Behaviors of the Fishes *Poecilia reticulata* and *Danio rerio*, [Lee et al., *International Journal of Radiation Biology*](#), Posted online on June 15, 2015.

'...The locomotion of the fed fish was affected in terms of changes in population and velocity distributions under the presence of the RF EMF emitted by the cell phone. There was, however, no significant difference in angular distribution...'

Europe: Opinion on potential health effects of exposure to electromagnetic fields, [Scientific Committee on Emerging Newly Identified Health, *Bioelectromagnetics*](#), Published online: 16 July 2015.

'In January 2015, the Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR) published its final opinion on "Potential health effects of exposure to electromagnetic fields." The purpose of this document was to update previous SCENIHR opinions...'

France: A novel method to assess human population exposure induced by a wireless cellular network, [Varsier et al., *Bioelectromagnetics*](#), Published online: 26 June 2015.

'...Metric takes into account the exposure induced by base station antennas as well as exposure induced by wireless devices to evaluate average global exposure of the population in a specific geographical area...'

Germany: Are patients with cardiac implants protected against electromagnetic interference in daily life and occupational environment?, [Napp et al., European Heart Journal](#), Published online: 23 April 2015.

'...Provide a contemporary overview of cardiovascular implantable electronic devices, their function and susceptibility of non-medical EMFs and provide recommendations for physicians caring for cardiac device patients presenting with EMI...'

Germany: Exposure Perception as a Key Indicator of Risk Perception and Acceptance of Sources of Radio Frequency Electromagnetic Fields, [Freudenstein et al., Journal of Environmental and Public Health](#), 2015(ID 198272), Accepted 14 June 2015.

'...In a fictional test situation, exposure reduction improved the acceptance of base stations, operationalized as the requested distance of the base station from one's own home. Furthermore, subjects with high RF EMF risk perception were most sensitive to exposure reduction...'

Greece: Preliminary background indoor EMF measurements in Greece, [Kottou et al., Physica Medica](#), Available online 23 May 2015.

'...As far as the RF electric field is concerned, the maximum values, in most cases, were below 0.5 V/m, however increased values above 1 V/m and up to 5.6 V/m were occasionally observed...It may be concluded that overall, the observed indoor EMF intensity values remained well below domestic and European established limits...'

Japan: No Dynamic Changes in Blood-brain Barrier Permeability Occur in Developing Rats During Local Cortex Exposure to Microwaves, [Masuda et al., In Vivo](#), 29(3):351-357, May-June, 2015.

'...No dynamic changes occurred in BBB permeability of the rats at either of these developmental stages, even during local RF exposure at non-thermal levels...'

Poland: The Role of the Location of Personal Exposimeters on the Human Body in Their Use for Assessing Exposure to the Electromagnetic Field in the Radiofrequency Range 98-2450 MHz and Compliance Analysis: Evaluation by Virtual Measurements, [Gryz et al., Biomed Research International](#), 2015(Article ID 272460), 2015.

'...The human body has a significant influence on the results of measurements using a single body-worn exposimeter in various locations near the body ((from -96 to +133)%, measurement errors with respect to the unperturbed -field value)...'

Serbia: Conversion from mono-axial to isotropic measurements for assessing human exposure to electromagnetic fields of GSM/DCS/UMTS base stations, [Koprivica et al., Annals of Telecommunications](#), 1-8, April 2015.

'...Measurement results for seven different environments show that the additional multiplicative conversion factor value of 1.95 should be applied and additional uncertainty in measurement results of 33.07 % should be taken into account...'

South Korea: 1950 MHz Electromagnetic Fields Ameliorate A β Pathology in Alzheimer's Disease Mice, [Jeong et al., Current Alzheimer Research](#), 12(5):481-492, 2015.

'...Findings indicate that chronic RF-EMF exposure directly affects A β pathology in AD but not in normal brain. Therefore, RF-EMF has preventive effects against AD-'

like pathology in advanced AD mice with a high expression of A β , which suggests that RF-EMF can have a beneficial influence on AD...

South Korea: Eight hours of nocturnal 915 MHz radiofrequency identification (RFID) exposure reduces urinary levels of melatonin and its metabolite via pineal arylalkylamine N-acetyltransferase activity in male rats, [Kim et al., *International Journal of Radiation Biology*](#), Posted online on July 20, 2015. .

'...Nocturnal RFID exposure can cause reductions in the levels of both urinary melatonin and 6-OHMS, possibly due to decreased melatonin biosynthesis via suppression of Aanat gene transcription in the rat pineal gland...'

Switzerland: Development of an RF-EMF Exposure Surrogate for Epidemiologic Research, [Roser et al., *International Journal of Environmental Research and Public Health*](#), 12(5):5634, Published: 22 May 2015.

'...98.4% of the brain dose originated from near-field sources...exposure from mobile phone base stations contributed 1.8% to the whole-body dose, while uplink exposure from other people's mobile phones contributed 3.6%...'

Taiwan: Mobile phone use and health symptoms in children, [Chiu et al., *Journal of the Formosan Medical Association*](#), 114(7):598-604, July 2015.

'...Although the cross-sectional design precludes the causal inference for the observed association, our study tended to suggest a need for more cautious use of MPs in children, because children are expected to experience a longer lifetime exposure to radiofrequency electromagnetic fields...'

The Netherlands: EEG Changes Due to Experimentally Induced 3G Mobile Phone Radiation, [Roggeveen et al., *PLoS ONE*](#), 10(6):e0129496, Published: June 8, 2015.

'...Results support the notion that EEG alterations are associated with mobile phone usage and that the effect is dependent on site of placement. Further studies are required to demonstrate the physiological relevance of these findings.'

Turkey: How to prepare head tissue-equivalent liquids for SAR calculations, dosimetry and hyperthermia researches at 900 and 1800 MHz GSM frequencies, [Sorgucu et al., *Radiation Protection Dosimetry*](#), Published online: June 26, 2015.

'...Fabrication of the tissue-equivalent liquids (TEs) is required. TEs have been widely employed in specific absorption rate calculations, dosimetry and hyperthermia researches. In this study, two separate head tissue-equivalent liquids (HELs) were prepared for 900 and 1800 MHz frequencies...'

UK: How to Establish and Follow up a Large Prospective Cohort Study in the 21st Century - Lessons from UK COSMOS, [Toledano et al., *PLoS ONE*](#), 10(7):e0131521, Published: July 6, 2015.

'...This article sets out the dos and don'ts for today's cohort studies and provides a guide on how best to take advantage of new technologies and innovative methods to simplify logistics and minimise costs...'

Ukraine: Oxidative mechanisms of biological activity of low-intensity radiofrequency radiation, [Yakymenko et al., *Electromagnetic Biology and Medicine*](#), Posted online on July 7, 2015.

'...Our analysis demonstrates that low-intensity RFR is an expressive oxidative agent for living cells with a high pathogenic potential and that the oxidative stress induced by RFR exposure should be recognized as one of the primary mechanisms of the biological activity of this kind of radiation...'

USA: Yes the Children Are More Exposed to Radiofrequency Energy From Mobile Telephones Than Adults, [Gandhi, Access, IEEE](#), 3(985-988), 2015.

'...The main reason for higher exposure of children (also women and men with smaller heads and likely thinner pinnae) to radiofrequency energy from mobile phones is the closer placement of the cell phone radiation source by several millimeters to the tissues of the head...'

The MMF is an international association of wireless communications manufacturers established to support scientific research in relation to mobile telephony and health www.mmfai.info

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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