



Recent scientific publications relevant to mobile telephony

June 2016

Australia: Has the incidence of brain cancer risen in Australia since the introduction of mobile phones 29 years ago? Chapman S, Azizi L, Luo Q, Sitas F. *Cancer Epidemiol.* 2016. pii: S1877-7821(16)30050-9. [Epub ahead of print]

<http://www.ncbi.nlm.nih.gov/pubmed/27156022?dopt=Abstract>

'The observed stability of brain cancer incidence in Australia between 1982 and 2012 in all age groups except in those over 70 years compared to increasing modelled expected estimates, suggests that the observed increases in brain cancer incidence in the older age group are unlikely to be related to mobile phone use. Rather, we hypothesize that the observed increases in brain cancer incidence in Australia are related to the advent of improved diagnostic procedures when computed tomography and related imaging technologies were introduced in the early 1980s.'

Belgium: On-body calibration and measurements using personal radiofrequency exposimeters in indoor diffuse and specular environments. Aminzadeh R, Thielens A, Bamba A, Kone L, Gaillot DP, Lienard M, Luc Martens L, Joseph W. *Bioelectromagnetics*, Version of Record online: 28 Apr 2016.

<http://dx.doi.org/10.1002/bem.21975>

'...Power density values obtained by applying on-body calibration in RC are higher than values obtained from no body calibration (only PEMs) and on-body calibration in anechoic room, by factors of 7.55 and 2.21, respectively.'

(RC = reverberation chamber; PEM = personal exposimeter)

Egypt: Histological and histochemical study of the protective role of rosemary extract against harmful effect of cell phone electromagnetic radiation on the parotid glands. Ghoneim FM, Arafat EA. *Acta Histochem.* pii: S0065-1281(16)30067-8, 2016. [Epub ahead of print]

<http://www.ncbi.nlm.nih.gov/pubmed/27155802?dopt=Abstract>

'...exposure of parotid gland of rat models to electromagnetic radiation of mobile phone resulted in structural changes at the level of light and electron microscopic examination which could be explained by oxidative stress effect of mobile phone. Rosemary could play a protective role against this harmful effect through its antioxidant activity.'

France: A Novel Methodology to Evaluate Uplink Exposure by Personal Devices in Wireless Networks. Krayni A, Hadjem KA, Sibille A, Roblin C, Wiart J. IEEE Transactions on Electromagnetic Compatibility 58:896-906, 2016.
<http://dx.doi.org/10.1109/TEMC.2016.2524543>

'...The input power is directly related to the antenna radiation pattern and to the local propagation scenario, through effects such as body obstruction and multipath diversity. The statistical analysis shows that the delivered input power can be modeled by an inverse Gaussian or a log-normal distribution.'

Germany: The Effects of Precautionary Messages about Electromagnetic Fields from Mobile Phones and Base Stations Revisited: The Role of Recipient Characteristics. Boehmert C, Wiedemann P, Pye J, Croft R. Risk Analysis. Version of record online: 10 May 2016.
<http://dx.doi.org/10.1111/risa.12634>

'...the effects of precautionary messages on threat perception depend on individual difference variables such as recipients' trait anxiety and gender. Also, the fact that precautionary communication did not result in heightened state anxiety challenges the assumption that precautionary messages induce fear or anxiety.'

Germany: Safety Checkpoints. Kazemipour A, Kleine-Ostmann T, Schrader T, Allal D, Charles M ; Zilberti L, Borsero M, Bottauscio O, Chiampi M. IEEE Microwave Magazine 17:76-81, 2016.
<http://dx.doi.org/10.1109/MMM.2016.2538514>

'With the advent of new applications such as more sophisticated airport security scanners, people will increasingly be exposed to millimeter-and submillimeter-wave radiation...'

India: Analysis of the Genotoxic Effects of Mobile Phone Radiation using Buccal Micronucleus Assay: A Comparative Evaluation. Banerjee S, Singh NN, Sreedhar G, Mukherjee S. J Clin Diagn Res.10:ZC82-85, 2016.
<http://www.ncbi.nlm.nih.gov/pubmed/27135009?dopt=Abstract>

The subjects were divided into two groups: low mobile phone users (those who used their mobile phone less than five years and less than three hours a week) and high mobile phone users (those who used their mobile more than five years and more than 10 hours a week). 'Mobile phone radiation even in the permissible range when used for longer

duration causes significant genotoxicity. The genotoxicity can be avoided to some extent by the regular use of headphones.'

Italy: Acute effects of 30 minutes of exposure to a smartphone call on in vitro platelet function. Lippi G, Danese E, Brocco G, Gelati M, Salvagno GL, Montagnana M. Blood Transfus. 2016. [Epub ahead of print]
<http://www.ncbi.nlm.nih.gov/pubmed/27177410>

A 30-min exposure of human blood '...to smartphone radiofrequency waves induced significant prolongation of collagen-epinephrine aggregation (median increase, 10%) and a considerable increase of mean platelet volume (median increase, 5%), whereas collagen-adenosine diphosphate aggregation and platelet count remained unchanged.'

Poland: Sperm DNA damage - the effect of stress and everyday life factors. Radwan M, Jurewicz J, Merecz-Kot D, Sobala W, Radwan P, Bochenek M, Hanke W. International Journal of Impotence Research, Published online: 14 Apr 2016.
<http://dx.doi.org/10.1038/ijir.2016.15>

'...Our findings indicate that stress and lifestyle factor may affect sperm DNA damage. Data from the present study showed a significant effect of age, obesity, mobile phone radiation and occupational stress on sperm DNA damage...'

Spain: Comprehensive personal RF-EMF exposure map and its potential use in epidemiological studies. Gonzalez-Rubio J, Najera A, Arribas E. Environ Res. 149:105-112, 2016.
<http://www.ncbi.nlm.nih.gov/pubmed/?term=Gonzalez-Rubio+J%2C+Najera+A+2016>

'...this paper presents a lattice map of personal RF-EMF exposure from exterior mobile phone base stations, covering the entire 110 administrative regions in the city of Albacete (Spain).'

United States: Report of Partial Findings from the National Toxicology Program Carcinogenesis Studies of Cell Phone Radiofrequency Radiation in Hsd: Sprague Dawley® SD Rats (Whole Body Exposure). Wyde M, Cesta M, Blystone C, Elmore S, Foster P, Hooth M, Kissling G, Malarkey D, Sills R, Stout M, Walker N, Witt K, Wolfe M, Bucher J. (Posted online May 26, 2016)¹
<http://biorxiv.org/content/early/2016/05/26/055699.full.pdf+html>

'This report contains peer-reviewed, neoplastic and hyperplastic findings only in the brain and heart of ... rats exposed to RFR starting in utero

¹ bioRxiv is a service for unpublished preprints and is not a peer-reviewed journal.

and continuing throughout their lifetimes. These studies found low incidences of malignant gliomas in the brain and schwannomas in the heart of male rats exposed to RFR of the two types [Code Division Multiple Access (CDMA) and Global System for Mobile Communications (GSM)] currently used in U.S. wireless networks. Potentially preneoplastic lesions were also observed in the brain and heart of male rats exposed to RFR...the tumors in the brain and heart observed at low incidence in male rats exposed to GSM- and CDMA-modulated cell phone RFR in this study are of a type similar to tumors observed in some epidemiology studies of cell phone use. These findings appear to support the International Agency for Research on Cancer (IARC) conclusions regarding the possible carcinogenic potential of RFR.'

UK: Validation of objective records and misreporting of personal radio use in a cohort of British Police forces (the Airwave Health Monitoring Study). Vergnaud AC, Aresu M, McRobie D, Singh D, Spear J, Heard A, Elliott P. Environmental Research 148:367-375, 2016.
<http://dx.doi.org/10.1016/j.envres.2016.04.018>

'...Where both objective and self-reported information were available, our study showed substantial misreporting in self-reported TETRA usage. Successful linkage of large numbers of TETRA users to objective data on their personal radios will allow objective assessment of TETRA radio usage for these participants and development of algorithms to correct bias in self-reported data for the remainder.'

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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