



*Recent scientific publications relevant to mobile telephony*

## July 2016

**China:** Social behavioral testing and brain magnetic resonance imaging in chicks exposed to mobile phone radiation during development.

Zhou Z, Shan J, Zu J, Chen Z, Ma W, Li L, Xu J. BMC Neurosci. 17:36, 2016.

<http://www.ncbi.nlm.nih.gov/pubmed/27287450>

*Eggs were arranged in a single layer around an iPhone 4s and exposed for 10 h/d from day 4 to 19 of incubation. 'Mobile phone radiation exposure during chick embryogenesis impaired social behaviors after hatching and possibly induced cerebellar retardation. This indicates potential adverse effects of mobile phone radiation on brain development.'*

**France:** Cerebral radiofrequency exposures during adolescence: Impact on astrocytes and brain functions in healthy and pathologic rat models.

Petitdant N, Lecomte A, Robidel F, Gamez C, Blazy K, Villégier AS. Bioelectromagnetics 37:338-350, 2016.

<http://www.ncbi.nlm.nih.gov/pubmed/27272062>

*From postnatal day 32 to 62, rats were subjected to 900 MHz exposures to the brain for 45 min (5 d/wk) at 0, 1.5 or 6 W/kg. The authors concluded that their '...results did not show any neurobiological impairment in healthy and vulnerable RF EMF-exposed rats compared to their sham-exposed controls. These data did not support the hypothesis of a specific cerebral sensitivity to RF EMF of adolescents, even after a neurodevelopmental inflammation.'*

**France:** Effects of 3G cell phone exposure on the structure and function of the human cytochrome P450 reductase. Tanvir S, Thuróczy G, Selmaoui B, Silva Pires Antonietti V, Sonnet P, Arnaud-Cormos D, Lévêque P, Pulvin S, de Seze R. Bioelectrochemistry 111:62-69, 2016.

<http://www.ncbi.nlm.nih.gov/pubmed/27243445>

*The authors reported that the changes in enzyme activity at 5 W/kg were '...due to small changes in the tertiary and secondary structures of the protein at 37°C. The relevance of these findings to an actual RF exposure scenario demands further biochemical and in-vivo confirmation.'*

**India:** Acute effects of 3G mobile phone radiations on frontal haemodynamics during a cognitive task in teenagers and possible protective value of Om chanting.

Bhargav H, N K M, Varambally S, Mooventhan A, Bista S, Singh D, Chhabra H, Venkatasubramanian G, T M S, H R N. *Int Rev Psychiatry* 28(3):288-98, 2016.

<http://www.ncbi.nlm.nih.gov/pubmed/27266893>

*Mobile phone use had no effect on cognition and brain haemodynamics.*

**India:** Microwave radiation (2.45 GHz)-induced oxidative stress: Whole-body exposure effect on histopathology of Wistar rats. Chauhan P, Verma HN, Sisodia R, Kesari KK. *Electromagn Biol Med.* 30:1-11, 2016. [Epub ahead of print]

<http://www.ncbi.nlm.nih.gov/pubmed/27362544>

*The authors concluded that microwave exposure (0.14 W/kg) for '...2 h a day for 35 d can potentially cause histopathology and oxidative changes in Wistar rats.'*

**Iran:** Effects of Electromagnetic Field Exposure on Conduction and Concentration of Voltage Gated Calcium Channels: A Brownian Dynamics Study.

Tekieh T, Sasanpour P, RafiiTabar H. *Brain Res.* 2016 Jun 23. [Epub ahead of print]

<http://www.ncbi.nlm.nih.gov/pubmed/27346366>

*'The ionic current inside the channel increases in response to high frequency electromagnetic field radiation, and the concentration profiles show that the residency of ions in the channel decreases accordingly.'*

**Japan:** Time trend in incidence of malignant neoplasms of the central nervous system in relation to mobile phone use among young people in Japan. Sato Y, Kiyohara K, Kojimahara N, Yamaguchi N. *Bioelectromagnetics* 37:282-289, 2016.

<http://www.ncbi.nlm.nih.gov/pubmed/27197787>

*'The aim of this study was to examine whether incidence of malignant neoplasms of the central nervous system from 1993 to 2010 has increased among young people in Japan, and whether the increase could be explained by increase in mobile phone use...Patterns in sex-, age-, and period-specific incidence increases are inconsistent with sex-, age-, and period-specific prevalence trends, suggesting the overall incidence increase cannot be explained by heavy mobile phone use.'*

**The Netherlands:** Outdoor and indoor sources of residential radiofrequency electromagnetic fields, personal cell phone and cordless phone use, and cognitive function in 5-6 years old children. Guxens M, Vermeulen R, van Eijsden M, Beekhuizen J, Vrijkotte TG, van Strien RT, Kromhout H, Huss A. *Environ Res.* 150:364-374, 2016.

<http://www.ncbi.nlm.nih.gov/pubmed/27348251>

*'We found inconsistent associations between different sources of RF-EMF exposure and cognitive function in children aged 5-6 years.'*

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