

**EMR and animals other than birds:
published papers in peer-reviewed scientific journals,
that show (possible) EMR effect**

Compiled by Joris Everaert Contact: joris.everaert(+at+)livingplanet.be

Education: M.Sc. in Biology (University of Ghent) Speciality: Ornithology, Ecology, Remote Sensing.

Current work: [Research Institute for Nature and Forest \(INBO\)](#). Environmental Vulnerability Maps, Environmental Impact Assessments, Impact of wind turbines, communication towers and power lines on birds and bats.

(Click on title. It will take you to the abstract of each paper.)

**Papers about possible effects of electromagnetic radiation from transmitter stations
(base stations) on animals other than birds**

**[Survey of effects of radiofrequency electromagnetic fields on production,health
and behaviour of farm animals](#)**

Löscher (2003) Praktischer Tierarzt 84:850-864

[Behaviour of dairy cows under the influence of electromagnetic fields](#)

Wenzel et al. (2002) Praktischer Tierarzt 83:260-267

**[Conspicuous behavioural abnormalities in a dairy cow herd near a TV and
Radio transmitting antenna](#)**

Löscher and Käs (1998) Praktischer Tierarzt 79:437-444

[Prevalence of nuclear cataract in Swiss veal calves and its possible association](#)

with mobile telephone antenna base stations

Hassig et al. (2009) Schweiz Arch Tierheilkd 151:471-478

RF radiation-induced changes in the prenatal development of mice

Magras and Xenos (1997) Bioelectromagnetics 18:455-461

Response to ACTH of cows under exposure to high-frequency electromagnetic fields

Wenzel et al. (2002) Tierarztl Prax Ausg G Grosstiere Nutztiere 30:144-147

Preliminary Study on the Induction of Sperm Head Abnormalities in Mice, Mus musculus, Exposed to Radiofrequency Radiations from Global System for Mobile Communication Base Stations

Otitolaju et al. (2009) Bull Environ Contam Toxicol 2009: in press

Electromagnetic pollution from phone masts. Effects on wildlife

Alfonso Balmori (2009) Pathophysiology 16:191-199

Mobile phone mast effects on common frog (Rana temporaria) tadpoles: the city turned into a laboratory

Balmori (2010) Electromagnetic Biology and Medicine 29:31-35

Some other papers about possible effects of electromagnetic radiation on animals other than birds

Effect of GSM 900-MHz Mobile Phone Radiation on the Reproductive Capacity of Drosophila melanogaster

Panagopoulos et al. (2004) Electromagnetic Biology and Medicine 23:29-43

The effects of microwave frequency electromagnetic fields on the development of Drosophila melanogaster

Atli and Unlu (2006) International Journal of Radiation Biology 82:435-441

Effect of low-frequency pulse-modulated 460 MHz electromagnetic irradiation on Drosophila embryos

Bol'shakov MA, Kniazeva IR, Lindt TA, Evdokimov EV (2001) Radiatsionnaia biologii, radioecologii 41:399-402

Cell death induced by GSM 900-MHz and DCS 1800-MHz mobile telephony radiation

Panagopoulos et al. (2007) Mutation Research 626:69-78

Comparison of Bioactivity Between GSM 900 MHz and DCS 1800 MHz Mobile Telephony Radiation

Panagopoulos et al. (2007) Electromagnetic Biology and Medicine 26:33-44

Bioeffects of mobile telephony radiation in relation to its intensity or distance from the antenna

Panagopoulos et al. (2010) International Journal of Radiation Biology 86:345-357

Effect of microwave exposure on the ovarian development of Drosophila melanogaster

Panagopoulos (2012) Cell Biochem Biophys 63:121-132

Radio frequency magnetic fields disrupt magnetoreception in American

cockroach

Vácha et al. (2009) The Journal of Experimental Biology 212:3473-3477

Effects of Electric Charges on Honeybees

Warnke (1976) Bee World 57:50-56

Mechanism of biological effects observed in honey bees (*Apis mellifera*, L.) hived under extra-high-voltage transmission lines: implications derived from bee exposure to simulated intense electric fields and shocks

Bindokas et al. (1988) Bioelectromagnetics 9:285-301

Measurement of the threshold sensitivity of honeybees to weak, extremely low-frequency magnetic fields

Kirschvink et al. (1997) The Journal of Experimental Biology 200:1363-1368

Transmission of vibration across honeycombs and its detection by bee leg receptors

Sandeman et al. (1996) The Journal of Experimental Biology 199:2585-2594

Bursts of magnetic fields induce jumps of misdirection in bees by a mechanism of magnetic resonance

Korall et al. (1988) Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology 162:279-284

Definitive identification of magnetite nanoparticles in the abdomen of the honeybee *Apis mellifera*

Desoil et al. (2005) Journal of Physics: Conference Series 17:45-49

Changes in honeybee behaviour and biology under the influence of cellphone

radiations

Sharma & Kumar (2010) Current Science 98:1376-1378

Mobile phone-induced honeybee worker piping

Favre (2011) Apidologie 42:270-279

Exposure to cell phone radiations produces biochemical changes in worker honey bees

Kumar et al. (2011) Toxicology International 18:70–72

Detection and Learning of Floral Electric Fields by Bumblebees

Clarke et al. (2013) Science, online DOI: 10.1126/science.1230883

GSM 900 MHz radiation inhibits ants' association between food sites and encountered cues

Cammaerts et al. (2012) Electromagnetic Biology and Medicine 31:151-165

Nerve cell damage in mammalian brain after exposure to microwaves from GSM mobile phones

Salford et al. (2003) Environmental Health Perspectives 111:881-883

Permeability of the blood-brain barrier induced by 915 MHz electromagnetic radiation, continuous wave and modulated at 8, 16, 50, and 200 Hz

Salford et al. (1994) Microscopy Research and Technique 27:535-542

Neurobiological effects of microwave exposure: a review focused on morphological findings in experimental animals

Orendáčová et al. (2007) Archives Italiennes de Biologie 145:1-12

GSM base station electromagnetic radiation and oxidative stress in rats

Yurekli et al. (2006) Electromagnetic Biology and Medicine 25:177-188

Exposure of rat brain to 915 MHz GSM microwaves induces changes in gene expression but not double stranded DNA breaks or effects on chromatin conformation

Belyaev et al. (2006) Bioelectromagnetics 27:295-306

Radiofrequency-induced carcinogenesis: cellular calcium homeostasis changes as a triggering factor

Anghileri et al. (2005) International Journal of Radiation Biology 81:205-209

Single- and double-strand DNA breaks in rat brain cells after acute exposure to radiofrequency electromagnetic radiation

Lai H, Singh NP (1996) International Journal of Radiation Biology 69:513-521

Intermittent exposure of rats to 2450 MHz microwaves at 2.5 mW cm²: behavioral and physiological effects

D'Andrea et al. (1986) Bioelectromagnetics 7:315-328

Behavioral and physiological effects of chronic 2,450-MHz microwave irradiation of the rat at 0.5 mW/cm²

D'Andrea et al. (1986) Bioelectromagnetics 7:45-56

Chronic exposure to GSM 1800-MHz microwaves reduces excitatory synaptic activity in cultured hippocampal neurons

Xu et al. (2006) Neuroscience Letters 398:253-257

Single strand DNA breaks in rat brain cells exposed to microwave radiation

Paulraj and Behari (2006) Mutation Research 596:76-80

Effect of an acute 900MHz GSM exposure on glia in the rat brain: A time-dependent study

Brillaud et al. (2007) Toxicology 238:23-33

Effects of cellular phone emissions on sperm motility in rats

Yan et al. (2007) Fertility and Sterility 88:957-964

Cognitive impairment in rats after long-term exposure to GSM-900 mobile phone radiation

Nittby et al. (2008) Bioelectromagnetics 29:219-232

Upregulation of specific mRNA levels in rat brain after cell phone exposure

Yan et al. (2008) Electromagnetic Biology and Medicine 27:147-154

Effects of prenatal exposure to a 900 MHz electromagnetic field on the dentate gyrus of rats: a stereological and histopathological study

Odaci et al. (2008) Brain Research 1238:224-229

Bone morphogenetic protein expression in newborn rat kidneys after prenatal exposure to radiofrequency radiation

Pyrpasopoulou et al. (2004) Bioelectromagnetics 25:216-227

Blood-brain barrier permeability and nerve cell damage in rat brain 14 and 28

days after exposure to microwaves from GSM mobile phones

Eberhardt et al. (2008) Electromagnetic Biology and Medicine 27:215-229

Melatonin reduces oxidative stress induced by chronic exposure of microwave radiation from mobile phones in rat brain

Sokolovic et al. (2008) Journal of Radiation Research 49:579-586

Effects of cellular phone emissions on sperm motility in rats

Yan et al. (2007) Fertil Steril 88:957-964

Effects of exposure to a mobile phone on testicular function and structure in adult rabbit

Salama et al. (2008) Int J Androl: in press

Radio frequency electromagnetic radiation (RF-EMR) from GSM (0.9/1.8GHz) mobile phones induces oxidative stress and reduces sperm motility in rats

Mailankot et al. (2009) Clinics 64:561-565

Non-thermal heat-shock response to microwaves

Pomerai et al. (2000) Nature 405:417-418

Weak extremely-low-frequency magnetic fields and regeneration in the planarian *Dugesia tigrina*

Jenrow et al. (1995) Bioelectromagnetics 16:106-112

The incidence of electromagnetic pollution on the amphibian decline: Is this an important piece of the puzzle?

Balmori (2006) Toxicological & Environmental Chemistry 88:287-299

Mobile phone mast effects on common frog (*Rana temporaria*) tadpoles: the city turned into a laboratory

Balmori (2010) Electromagnetic Biology and Medicine 29:31-35

Bats Avoid Radar Installations: Could Electromagnetic Fields Deter Bats from Colliding with Wind Turbines ?

Nicholls and Racey (2007) PLoS ONE 2(3):e297

The Aversive Effect of Electromagnetic Radiation on Foraging Bats—A Possible Means of Discouraging Bats from Approaching Wind Turbines

Nicholls and Racey (2009) PLoS ONE 4(7):e6246

EMR and other animals: published scientific 'reports', and not (yet) published papers, that show (possible) EMR effect

Bees, birds and mankind, Destroying Nature by Electrosmog

U. Warnke

Mobile telephony radiation radiation on living organisms

Dimitris J. Panagopoulos and Lukas H. Margaritis

An epidemiological study on low-level 21-month microwave exposure of rats

Adang

Electromagnetic Radiation: Influences on Honeybees (*Apis mellifera*)

Kimmel et al.

Can Electromagnetic Exposure Cause a Change in Behaviour? Studying Possible Non-Thermal Influences on Honey Bees – An Approach within the Framework of Educational Informatics

Harst et al.

How Electromagnetic Exposure Can Influence Learning Processes – Modeling

Effects of Electromagnetic Exposure on Learning Processes

Stever and Kuhn