



Non-Ionizing Radiation & Children's Health

International Joint Workshop
18 - 20 May 2011, Ljubljana, Slovenia

POSTER

PLATFORM PRESENTATION

Research On Children's Health And Exposure To Electromagnetic Fields

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Nowadays children are exposed to a variety of electromagnetic radiations ranging from low frequency fields of the conventional electrical network up to high frequency electromagnetic fields from TV, radio and mobile telecommunication. Mainly two things raised concern: the strong increase of mobile telecommunication in the last years and the repeatedly reported correlation between exposure to 50/60 Hz fields and the elevated risks of childhood leukaemia. Against that background the Federal Office for Radiation Protection (BfS) funded a number of studies with the objective to find out whether there are adverse health effects of electromagnetic fields for children.

HF-EMF:

- A dosimetric approach based on anatomical head models of children examined whether there is an age-dependent, tissue-specific HF exposure. On the one hand, the results showed no age-dependent changes of the peak spatial SAR when averaged over the entire head. Thus, the current methods for compliance testing of mobile phones prove to be conservative. On the other hand, locally induced fields can be higher in certain subregions of the brain, especially in heads of younger children.
- In a multi-generation in vivo study, mice were chronically exposed to UMTS fields. Development and fertility were monitored by investigating histological, physiological and reproductive functions. The results did not indicate harmful effects. Likewise a 3-Generation study in rats did not show negative effects of chronic GSM or UMTS-exposure on the biological parameters under investigation, i.e., cognition, immune system, stress response and the integrity of the blood brain barrier.
- An ongoing in vivo study examines age effects of repeated near field head exposures to electromagnetic fields of mobile communication on development and differentiation of the CNS in juvenile rats.
- An epidemiological case-control study found no statistical significant association between proximity to radio and television transmitters and childhood leukaemia.
- The association of well-being with individually measured and self-assessed levels of exposure to fields of mobile telecommunication among children and adolescents was investigated in a population-based cross-sectional study. The results do not indicate an effect of objective exposure to mobile telecommunication networks, but in few cases an association between subjective exposure and health complaints was found.

ELF:

An ongoing in vivo study is set up to clarify whether pre- and postnatal exposure of mice to low frequency magnetic fields (50 Hz) has an impact on the developing hematopoietic system, the immune system and the CNS with the main focus on neoplasias of the hematopoietic system.