Poland

Report on EMF Activities
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General **research** activities **related to EMF health**

In Poland research activities in the field of bioelectromagnetics are concentrated in in three **main centres**:

1. Department of Microwave Safety, Military Institute of Hygiene and Epidemiology, Warsaw, Poland (DMS-MIHE);

2. Laboratory for Electromagnetic Hazards, Institute of Occupational Medicine, Lodz, Poland (LEMH-IOM);

3. Institute of Electroenergetics and Institute of Telecommunication, University Technical School, Wroclaw (IE-UTSW; IT-UTSW).

There exist also research centres, affiliated at the University Medical School and Agricultural Academy in Lublin (UMS-AAL), Silesian Medical University School in Katowice (SMUSK) and at some other university departments, where certain projects on particular subjects in bioelectromagnetics are currently on-going.

During 2003 – 2004 the following **main projects** were in progress in laboratories in Poland:

1. Assessment of individual exposure of residents to 50 Hz magnetic fields (IE-UTSW) and assessment of exposure of workers to ELF and RF fields, including transient exposures (DMS-MIHE, LEMH-IOM, IE-UTSW);

2. Improvement in construction of digital EMF meters (DMS-MIHE, IT-UTSW) and development of meters for pulse-modulated MW fields (DMS-MIHE);

3. Immunotropic and cytogenetic effects of pulse-modulated MW fields on isolated human mononuclear blood cells *in vitro* (DMS-MIHE);

4. Assessment of functional abnormalities of cardiac function in workers exposed occupationally to EMFs of various frequency and modulation (LEMH-IOM, DMS-MIHE);

5. Influence of static and 50 Hz magnetic fields (5 – 10 mT) on free-radical formation and redox enzymes in various *in vitro* cellular systems (LEMH-IOM);

6. Influence of 50 Hz magnetic fields (0.5 – 5 mT) on permaeability, active transport and morphology of human placental barrier (UMS-AAL);

7. Clinical application of ELF magnetic fields at high (5 – 15 mT) (magnetotherapy) and low (20 – 50 μT) (magnetostimulatrion) inductivity with various modulations (SMUSK).

8. Assessment of changes in otoacoustic emission (SOAE, TOAE, DPOAE) in volunteers exposed to low-level pulse-modulated microwave fields (1300 MHz radar radiation and 900/1800 MHz GSM mobile phone signals) (DMS-MIHE).

New **policies and legislations** regarding EMF exposure

In November 2003 a new regulation of EMF safety guidelines for general public was introduced in Poland by an Ordinance of the Minister of Environment. The maximal permissible exposure levels (PEL) for public exposure were set for the whole EMF spectrum:

Frequency range (*f*)	Physical parameter		Power density
	Electric (E) component	Magnetic (H) component	
0 Hz	10 kV/m	2500 A/m	
> 0 – 0,5 Hz	-	2500 A/m	
> 0,5 Hz – 50 Hz	10 kV/m	60 A/m	
> 0.05 kHz – 1 kHz	-	3/*f* A/m	
> 0,001 MHz – 0.8 MHz	20 V/m	3 A/m	
> 0.1 MHz – 0.8 MHz	20 V/m	3 A/m	
> 0.8 MHz – 3 MHz	20 V/m	2.4/ *f* A/m	
> 3 MHz – 10 MHz	6.14 V/m	2.4/ *f* A/m	
> 10 MHz – 300 MHz	6.14 V/m	-	
> 300 MHz – 300 000 MHz	-	-	0.1 W/m^2

In 2003 a group of researchers active in bioelectromagnetics organized a Commission of Bioelectromagnetic Problems, affiliated at the Polish Society for Radiation Research. The Commission, chaired by Dr Marek Zmyslony of the Institute of Occupational Medicine in Lodz, Poland, lists 12 members and works on proposal of new guidlines and safety standards for occupational and public EMF exposure. It is planned to develop an integrated standard for public and occupational exposures, partly harmonized with ICNIRP recommendations (maximal permissible levels), but still providing additional protection against possible effects of long-term exposures. The proposal of new EMF guidlines and safety standards is planned for early 2005.

Areas of **public concern** and national responses

Main areas of public concerns include possible health risks from mobile communication system and cell phone base stations (about 70 % of all concerns) and high voltage power lines (about 30% of concerns). There exist also single cases of concerns related to radar devices and claims of former radar technicians of health disorders linked causaly to past EMF exposures.

New public **information** activities

Information activities for the public were undertaken in 2001 – 2004 by a group of Polish experts in bioelecetromagnetics in form of meetings, discussions and publications of popular booklets and more informative monographs. E.g., in 2002 and 2003 the monograph entitled "Electroenergetic lines and stations in human environment" (in Polish), sponsored by Polish Electroenergetic Nets, was edited and distributed free of charge to interested citizens. Cell phone operators organize cyclic conferences on possible health risks of mobile communication systems for large groups of interested citizens.