Research on biological effects of EMF

No national program on biological and health effect is running, or is planned for the next future. However, a number of studies are being carried out in collaboration within institutes from Italy and other countries. Ongoing research in vitro includes investigation of possible effects of exposure to GSM-like RF fields on gene expression in human fibroblasts, and effects of new (WiFi) RF signals on human neural cells.

With regard to in vivo studies on animals, a French-Italian collaborative study addresses the question whether WiFi signals may alter the development of the immune system, leading to immune dysfunctions in the adult. For the first time, the effects of exposure to WiFi signals on the maturing immune system of newborn mice are described. Another study aims at investigating the possible influence of exposure to GSM-phones associated emission on structure and function of the thyroid gland in an animal model (Male Sprague-Dawley rats).

Research on exposure environments and conditions

In 2007, the Italian Institute for Prevention and Safety at Work (ISPESL) promoted a research project to analyze problems that might be encountered with the practical implementation of the EU Directive 2004/40 in medical environments. The project aims at analyzing the Italian scenario of EMF exposure and its possible peculiarities. In addition, standardized procedures of measurement and numerical dosimetry will be developed, as tools to assess the actual exposure of medical doctors and operators in the proximity of MRI systems.

Epidemiological research

The Italian research team of the Interphone study continues its collaboration in the project. Activities in progress include data analysis and interpretation.

The possibility to participate in other multi-national studies will be considered taking into account the resources available and the possibility to provide a significant contribution in terms of cases.

Control activities

A systematic control activity is carried out by Regional Agencies for Environmental Protection, in each Italian region. Such activity is mainly aimed at verifying compliance of both low-frequency (power lines, substations, and transformers) and high-frequency (radio and TV broadcasters, base stations) with the Italian exposure standards. The Agencies also collaborate with regional and local authorities in planning policies and actions for the siting of new installations. The National Institute for Environmental Protection and Research (ISPRA, formerly the National Agency for Environmental Protection) monitors the activities of regional agencies. A recently publish report provides data showing (after a peak following the implementation of national standards) a stable value, for the years 2005-2007, of the number of controls carried out on ELF sources nation-wide (about 600 per year). Controls on RF sources show a regular decline, from about 4000 in 2005 to about 2000 in 2007.
Risk perception and communication

Although quantitative data are missing, a relevant decrease in public concern is reported by local administrations, as well as by health and environmental authorities. The phenomenon is correlated to a significant decrease of attention paid to EMF risks by the media. The Consortium Elettra 2000 monitored daily press in the years 2007-2008, reporting over the period a reduction of 55% in the number of articles on EMF.

Communication campaigns may have contributed to such trend. Initiatives of various kinds have been taken at local level by municipalities and regional councils. In contrast, no action has been taken by the Government at the national level. However, the Ministry of Health promoted in 2006 a communication project that is being carried out by the National Institute of Health. The activities of the project include translation into Italian of the most significant documents (or relevant parts of them) produced by internationally recognized bodies.

A peculiar activity that has being carried out by Foundation “Ugo Bordoni” is the so-called “Blue Shuttle”, a compact car that travels the Country equipped with measurement instrumentation and didactic tools.

Regulations

The Italian Parliament converted in 2008 the EU Directive 2000/40 into a national law, ahead of the finale date of 30 April. After the final date for transposition has been postponed by the European Council, the practical implementation of the norms (in particular, the obligation to comply with exposure limits) has been suspended. However, the norms on EMF have been incorporated into a general law regulating all aspects of protection at workplaces, against any agent and risk. Such law requires in particular an assessment of risk at any workplace where EMF-emitting devices are present.

Italian researchers are actively working with the European Commission on the analysis of problems related to the implementation of the EU Directive.

Notes by Paolo Vecchia, National Institute of Health, Rome