



## **GOVERNMENT ACTIVITIES**

In May, the European Commission's Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR) released an update of its opinion on possible health effects of exposure to electromagnetic fields (EMF). Regarding radio-frequency (RF) EMF and health, the SCENIHR states: "In conclusion, no health effect has been consistently demonstrated at exposure levels below the ICNIRP [International Commission on Non-Ionizing Radiation Protection] limits established in 1998. However, the data base for this evaluation is limited, especially for long-term low-level exposure." The committee recommends more research: to determine whether children may be more sensitive to RF fields, to conduct a long-term epidemiologic study to determine whether there are long-term effects of mobile phone use, and to accurately assess individual exposure to RF fields through an investigation using personal dosimeters.

This past year, the European Commission declined to renew one of its 5-year Coordination Actions for Scientific and Technical Research that was specifically charged with looking into Potential Health Implications from Mobile Communication Systems, known as COST 281, but has accepted a preliminary proposal to create a new COST program with an expanded charge. Some of the goals of the new program, which would encompass ELF in addition to RF EMF, are to identify emerging technologies for possible study, serve as a forum for an open exchange of research results and techniques, and share knowledge about public beliefs and reactions to potential health impacts of emerging EMF technologies. The coordinator of this effort, Alastair McKinlay of the UK Health Protection Agency, must submit a final proposal by July 27.

In the US, the National Academy of Sciences (NAS) accepted a request by the US Food and Drug Administration (FDA) to organize an expert panel whose purpose is to identify gaps in the knowledge of biological effects and possible adverse health outcomes from RF EMF exposure from wireless communication devices and to identify future research needs to meet the deficiencies. After initial organizational meetings the panel will hold a workshop, set for August, at which invited speakers will deliver science presentations. There will be opportunities for discussion by interested parties and the public at this open workshop. Afterwards, drawing on the presentations and workshop discussions, the NAS expert panel will meet in a closed session to draft a consensus report which is expected by the end of the year.

## **STANDARDS**

The lack of harmonization of EMF standards among nations has been a problem for international companies. Large discrepancies exist between the Eastern (e.g., Russian and Chinese) exposure standards and Western (e.g., North American and European) standards, with the former being many times more restrictive than the latter. In a paper published in June, based on a presentation at a workshop held last year, 2 Australian authors explore what they call the "substantial differences" between Eastern and Western standards. They conclude that "the ideal of fully harmonized EMF standards seems remote at present," but pressure from globalization and increasingly widespread use of wireless telecommunication may hasten the process.

One attempt to bring East and West together on this issue has been an industry-supported French-Russian collaborative research project which will evaluate the Russian studies that have been the basis of their strict limits and attempt to replicate the results in 2 independent laboratories using modern dosimetric and biological methods. The experiments were completed this summer and, at a July meeting, the research groups will share results and coordinate analyses. It is hoped that reports will be submitted for publication later this year.

Even within the West, different countries use somewhat different standards, with the European community adopting those recommended by the ICNIRP and the North American community adopting those recommended by the Institute of Electrical and Electronics Engineers (IEEE). In their paper, the Australian authors note that the ICNIRP will be revising its RF EMF

standards within the next few years and this “provides the opportunity to remove some or many of the differences that exist between ICNIRP and IEEE.”

## **RISK COMMUNICATION**

A 3-day workshop in Stresa, Italy, in May brought together risk communication experts and industry representatives involved in communicating with the public about EMF. Participants generally agreed that the EMF controversy is often driven by interaction between media and a small number of vocal activists, perhaps only 5% of the population. Also they noted that little is known about how to measure success, leaving managers struggling to set and meet communication program goals. Some experts pointed out that information campaigns may have no immediate effect at all; however, they suggested that basic principles derived from academic research may help in the long run:

- Risk education must precede effective risk communication.
- Precautionary advice has the paradoxical effect of increasing concern.
- People interpret a speaker acknowledging scientific uncertainty as admitting being uninformed.
- Messages should be tailored for specific audiences.
- Always consider children to be a special population.
- Understand that people usually assume that speakers have a hidden agenda.
- Industry is rarely seen as a valid source of information; therefore information should be provided by a highly credible, trusted third party, especially in times of crisis.

These points suggest that risk communication in the context of scientific uncertainty will be an ongoing challenge. The workshop ended with many participants asking for more study to create a practical risk communication framework and guidelines that could be adapted to meet local situations.

## **NOTABLE SCIENTIFIC DEVELOPMENTS**

In a meta-analysis of epidemiologic studies of mobile phone use and brain tumor risk, a group of Swedish scientists reported a more than doubling of the risk among people with 10 or more years of mobile phone use. However, they provided no detail on their methodologies and exposure assessment categories.

An attempt by UK researchers to replicate, using a much larger sample size, a 2004 report of reduced auditory performance with mobile phone exposure found no evidence of the effect. The replication had the statistical power to “confidently reject the null hypothesis” if a real effect had existed, the UK team concluded.

Japanese researchers believe theirs is the first study to use human eye movements to assess possible differences in attention with mobile phone exposure for 30 min compared to sham exposure. Overall, although some differences were observed, results “suggest that there is no significant effect of EMF emitted by mobile phones on the cerebral cortex,” they summarize.

Also from Japan, initial results of a survey of women in Japan with self-reported electromagnetic hypersensitivity (EHS) as well as normal subjects indicate that those with EHS complained of more discomfort and seemed more susceptible overall to stress than other subjects, but that symptoms were not related to RF base station exposure. The research group also reported that exposure to RF EMF had no significant effect on performance in a reaction time task, several physiological measures, or mood/well-being. These results, based on a larger sample size and using a standardized questionnaire, among other improvements, do not support those from the well-publicized 2003 study from the Netherlands.

Lastly, 2 animal-related studies received significant media attention in the past quarter. German researchers observed lower numbers and longer times for bees returning to hives that contained an operating mobile phone compared to bees at control hives. Questions remain about methods and statistics used in the experiments. Media tried to link RF EMF to global colony collapse disorder, but the authors stressed that this was an inaccurate interpretation of the work. Later, two researchers from Belgium reported that “spatial variation in the number of house sparrow males was negatively and highly significantly related to the strength of electric fields from both the 900- and 1800-MHz downlink frequency bands and from the sum of these bands,” that is, from nearby telecommunications base stations. These results, they concluded, “support the notion that long-term exposure to higher levels of radiation negatively affects the abundance or behavior of house sparrows in the wild.” The field observations, however, were conducted by a person who was aware of the presence of the base stations. Although these results were not significant in and of themselves, they received considerable media attention.