WHO International EMF Project
International Advisory Committee Meeting

24-25 May 2010

Report on Activity in Finland in 2009/2010

General research activities related to EMF health

A national research programme on mobile phones and health, titled **"Wireless communication devices and human health (WIRECOM)"**, started in 2009. The programme is coordinated by the Finnish Institute of Occupational Health (FIOH) and jointly funded by the National Agency for Technology and Innovations (TEKES) and telecommunication enterprises. The sub-projects (and the responsible institutes) are the following:

1) Thermal effects of RF fields **(FIOH)**
2) ***Prospective cohort study on mobile phone use and health-COSMOS*** **(STUK)**
3) Mobile phone radiation and human brain: PET-study **(University of Turku)**
4) ***RF dosimetry for biomedical studies*** **(STUK)**

Another EMF-related research project carried out by FIOH is titled **"Safe return to work after cardiac pacemaker implantation",** aiming to evaluate and manage EMF interference risks for workers with a pacemaker at various work places. The project is funded by the Finnish Work Environment Fund.

In the ELF range, a national project "Safety of magnetic fields at electricity distribution substations (MF Safety)" is focused to estimate the highest current density induced in the body of a person working at the substation by computations. The applicability of commercially available computation software programmes is tested for the computation of induced current density. The project is carried out by STUK, FIOH, and Tampere University of Technology.

Finland is a participating country in the COST Action (BM0704) “Emerging EMF Technologies and Health Risk Management”, and in its working groups.

New policies and legislations regarding EMF exposure

The protection of workers' health against the negative impact of electromagnetic fields is covered by the provisions of a European directive regarding the exposure of workers to the risks of electromagnetic fields (2004/40/EC). However, the Commission has decided to postpone the implementation of the EMF directive, in order to evaluate social, economic and environmental impact of the directive. This study was carried out by a European consortium FICETTI, coordinated by Finland (FIOH). The project provided the European Commission with information on the impact of various policy options related to a possible amendment of the EMF directive.

Areas of public concern and national responses

A survey supporting risk communication for the general public was carried out by Finnish Radiation and Nuclear Safety Authority (STUK) on the exposure of the general public to radiofrequency radiation. Data was gathered on the exposure caused by the most common user equipment, as well as on exposure to the background fields from the broadcasting transmitters and base stations in different residential environments. The report is published in STUK Report series (in Finnish).

Public information activities

Finnish Radiation and Nuclear Safety Authority (STUK) has prepared a position paper, according to which children's mobile phone use should be restricted for example by favouring text messages instead of talking. Although research to date has not demonstrated health effects from mobile phone's radiation, precaution is recommended for children as all of the effects are not known. STUK position paper notes that the children's mobile phone use could be, restricted in the following ways:

- favouring the use of text messages rather than calls,
- parents limiting the number of calls and their duration,
- children can be advised in the use of hands-free devices, which reduces the exposure significantly. When communicating on the hands-free device the phone should be kept a couple of centimetres away from the body,
- talking in an area with low connectivity or in a moving car or a train should be avoided.

However STUK does not deem it justified to ban children's use of mobile phones altogether. Mobile phones also promote security, since they facilitate easy communication with parents.

Some recent EMF-related publications

Alanko T, Hietanen M, von Nandelstadh P. Occupational exposure to RF fields from base station antennas on rooftops. Annals of Telecommunications 63 (2008): 125-132.

Kännälä S, Toivo T, Alanko T, Jokela K. Occupational exposure measurements of static and pulsed gradient magnetic fields in the vicinity of MRI scanners. Phys Med Biol 54 (2009): 2243-2257

Toivonen T. Microwave dosimetry in biological exposure studies and in practical safety evaluations. Doctoral dissertation. STUK - A243, April 2010, Helsinki. 81 p + app.

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