2.9.2022

WHO International EMF Project
Report on activities in Finland from June 2021 to June 2022

General research activities related to EMF health

The international collaborative cohort study of mobile phone use and health (COSMOS) is on-going, and the Finnish participant is Tampere University (TUNI). The study involves approximately 15,000 Finnish participants who filled in the baseline questionnaires and have been followed up since 2009 – 2010 with three repeat questionnaire rounds and information on health outcomes obtained through linkages to various registers. Call data have been obtained repeatedly from mobile network operators traffic databases. The first results from international collaborative analyses of headache, tinnitus, hearing loss and sleeping problems have been published and showed no clear association with amount of mobile phone use after adjustment for other risk factors (Auvinen et al. Int J Epidemiol 2019, Tettamanti et al. Environ Int 2020). Cancer incidence has also been compiled for several participating cohorts, but data availability has been a challenge in some countries.

Analyses of brain tumor incidence in the past two decades to evaluate whether there is any hint of a relation to the increase in radio frequency (RF) electromagnetic field exposure in the population are on-going at TUNI. No increasing trend was found for gliomas (Natukka et al. Acta Oncol 2019) and a slight consistent increasing trend in childhood brain tumors (Abuhamed et al. BMC Cancer 2022). Analyses of incidence trends of vestibular schwannoma (acoustic neuroma) and meningioma are being finalized. A collaborative analysis of male glioma incidence trends in the Nordic countries did not show any increases attributable to frequency of mobile phone subscriptions (Deltour et al. Environ Int 2022).

Aalto University has conducted computational modelling studies of human exposure to electromagnetic fields in the ELF and intermediate frequency ranges. Dosimetry modelling has been used for the estimation of the thresholds for sensory effects (electro- and magnetophosphenes) of ELF electromagnetic field exposure, producing data for the development of human exposure limits. Aalto is also currently undertaking a project on the measurement of electrical conductivity using magnetic resonance imaging data and impedance measurements. The initial results have provided new data on the anisotropic electrical properties in the intact human body in the ELF and intermediate frequency ranges. Aalto has also contributed to a literature review of dosimetry studies at low frequencies for ICNIRP and participates in an intercomparison study organized by the IEEE International Committee on Electromagnetic Safety.

New policies and legislations regarding EMF exposure

No new policies and legislations

Areas of public concern and national responses

STUK has responded to several questions on EMF health effects. The radiation safety of base stations was the main area of public concern during the last year.

Municipal authorities requested statements from STUK on several proposals for a town plan where new residential areas were located near existing power lines or on new power lines planned to be constructed near residential houses. STUK gave recommendations for spatial planning. STUK

recommends that premises where the presence of children is permanent should not be located so that the average magnetic flux density exceeds 0.4 µT.

New public information activities

No new public information activities