198 OCCUPATIONAL EXPOSURES TO ELECTROMAGNETIC FIELDS IN THE INTEROCC STUDY

Laurel Kincl,[1] Joseph Bowman,[2] David Conover,[2] Yixuan Guo,[2] Jordi Figuerola,[1] David McLean,[3] Lesley Richardson,[4] Martie van Tongeren,[5] Elisabeth Cardis[1] *[1]CREAL, Barcelona, Spain; [2]NIOSH, Cincinnati, USA; [3]Massey University, Wellington, New Zealand; [4]CRCHUM, Montreal, Canada; [5]IOM, Edinburgh, UK*

10.1136/oemed-2011-100382.198

Objectives to assess workplace exposures to electric and magnetic fields (EMF) at radio frequencies (RF) and extremely low frequencies (ELF); to estimate brain cancer risks from occupational ELF magnetic fields.

Methods Personal interviews of INTEROCC subjects included lifetime occupational histories and detailed questions about workplace EMF sources. To evaluate EMF exposures, personal ELF magnetic field monitoring data were compiled into a job-exposure matrix (JEM), and source measurements were assembled into a source-exposure matrix (SEM). Algorithms were developed for combining the JEM and SEM with interview data to calculate cumulative EMF magnitudes in the RF and ELF bands for all subjects. As the first step in our EMF risk analyses, cumulative exposures to ELF magnetic fields were calculated from the JEM, and used to assess risks for meningioma and glioma, adjusting for age, gender, region, and education.

Results The SEM has EMF exposures for all 188 RF sources reported by INTEROCC subjects, and the JEM has ELF magnetic fields for all their 561 jobs. Initial analyses with ELF suggested no associations with glioma (OR=0.83 in the highest quintile, 95% CI: 0.64 to 1.04) or meningioma (OR=0.99 in the highest quintile, 95% CI: 0.78 to 1.26).

Conclusions The risk analysis with the ELF JEM is the first step in INTEROCC's EMF protocol, and shows no association. When individualised exposure assessments using the interview reports on EMF sources and usage conditions are completed, INTEROCC with its 8948 subjects will be the most

powerful study of occupational EMF and brain cancer ever conducted.