Abstracts

OCCUPATIONAL EXTREMELY LOW FREQUENCY MAGNETIC FIELD EXPOSURE AND CANCER INCIDENCE IN A LARGE PROSPECTIVE COHORT STUDY

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Objectives This study investigated the association between exposure to occupational extremely low frequency magnetic fields (ELF-MF) and various types of cancer within the prospective Netherlands Cohort Study (NLCS).

Methods For this case-cohort analysis, 120,852 men and women aged 55 to 69 years at time of enrollment in 1986 were followed up (17.3 years) for incident cases of lung, breast, brain and haematopoietic cancers and their subtypes. Information on occupational history and potential confounders such as sex, age, smoking, alcohol use and attained educational level were collected at baseline through a self-administered questionnaire.

Occupations were coded using the International Standard Classification of Occupations (ISCO-88). Occupational ELF-MF exposure was assigned by using a semi-quantitative ELF job-exposure matrix which assigns ordinal exposure levels (background, low and high exposure) based on intensity and probability of exposure. Metrics of ELF-MF exposure were ever low and ever high exposure versus background exposure, duration of exposure, and cumulative exposure to ELF-MF up to baseline. Associations with cancer incidence were analysed with Cox-regression using attained age as underlying time scale.

Results Ever low or ever high exposure to ELF-MF showed no effect on cancer incidence of lung, breast, brain cancer, nor any of the assessed subtypes. Duration and cumulative exposure also showed no effect of ELF-MF exposure on these cancer sites. Ever high exposed to ELF-MF showed a significant association with acute myeloid leukaemia (AML) (hazard ratio [HR] 2.09; 95% confidence interval [CI] 1.05–4.15) and follicular lymphoma (HR 2.40; 95%CI 1.00 – 5.77). In addition, cumulative...