

In 1979 Wertheimer and Leeper revealed an increase of childhood leukaemia in populations living in Electromagnetic fields (EMF) exposed areas. Three years later they discovered an increase of adult leukaemias too. In 1990-2000 the reports became frequent and precise. Case-control studies performed in New Zealand also gave confirmation. The analysis of working expositions showed consistent and statistically significant (SS) increase of leukaemia in electric welders (OR=2.8) and electric lines employees (OR=5.8). The risk excess concerned mainly non-lymphocytic acute leukaemia (OR=2.3) and lymphoblastic acute leukaemia (not SS). On the whole, by analyzing the increase of occupational exposition as a function of work length and EMF intensity, dose-response relationship for acute leukaemia resulted statistically significant. SS increase of the incidence of leukaemias, lymphomas and acute/chronic lympho-myelodisplastic and proliferative syndromes have been repeatedly documented in adult males exposed both in living and working environments (train drivers and railway workers, electric welders and electric workers) to relatively modest EMF values (μT). Ionizing EMF radiations are well correlated to malignant brain tumours, for which the sensitivity to induction decreases with age (RR from 3.56 to 0.47; $P=0.037$). In contrast, benign meningiomas showing high and steady sensitivity in adults. In adults many reports of brain tumours associated to residential and occupational exposure are known. An increase of some tumours types, mainly leukaemias, and a more than triplicate risk of mortality due to SNC (SMR=3.7) and brain tumours (SMR=3,94) was observed among people living near high voltage electric lines to quite modest EMF values (0.34-0.44 μT). The increase of other malignancies such as melanomas, prostate, kidney, thyroid, digestive and pancreas tumours was also reported among people living in occupational and residential areas in which EMF levels were similar to those able to induce a SS doubling of childhood leukaemias ($<1 \mu\text{T}$).

LEUKAEMIAS, LYMPHOMAS, LYMPHO-MYELODISPLASIC AND PROLIFERATIVE SYNDROMES AND ELECTROMAGNETIC FIELDS

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