

*DE Foliart et al. British J Cancer. (2006) Vol.94 p 161 – 164*

**Magnetic field exposure and long-term survival among children with leukaemia**

The study finds inconsistent evidence that children with leukaemia may be harmed by exposure to emfs at home.

Two meta-analytical studies have concluded there is a statistically significant association between high levels of emf exposure ( $\geq 0.4 \mu\text{T}$ , and  $\geq 0.3 \mu\text{T}$ ) and childhood leukaemia. There is no reason to presume a direct causal link (indeed the individual studies upon which the meta analyses are made conclude there is no significant association) but if there is even a remote possibility of this, is it reasonable to continue residence in the high emf environment?

This study examined the long term outcomes of childhood leukaemia cases as a function of emf exposure. Median duration of follow-up was 5 years. 73 out of 386 cases suffered an adverse outcome. Personal emf exposure was measured over the course of one day several times during the course of the study. The mean time-weighted average exposure was (0.11–0.13  $\mu\text{T}$ ) 19 cases had an exposure  $\geq 0.3 \mu\text{T}$ . Measurements were stable over the course of up to 3 samples.

There was no significant association between exposure and (lack of) event free history during follow-up.

For deaths, there was an association between exposure  $\geq 0.3 \mu\text{T}$  and outcome; hazard ratio = 4.53 (95% CI = 1.49 to 13.7).

Comment

This was a high quality prospective study but failed to capture a representative sample of leukaemia cases.

The result of interest was that at high exposures there were more deaths from leukaemia than would be expected. This result was subject to low precision; similar studies should be performed before this one can be interpreted with any confidence. It would seem odd that fatalities would be more significantly associated with exposure than would less severe outcomes.

Fewer than 5% of children who took part had an exposure  $\geq 0.3 \mu\text{T}$ . As a rough guide the fraction of deaths attributable to high exposure would be around 15%, assuming the above risk estimate is valid. The death rate was 1%. Less than 1% of initial diagnoses would be linked to emf exposure.