

Recent Studies of Leukemia Risk and Power Transmission Line Exposure

Lowenthal RM, Tuck DM, Bray IC (2007) Residential exposure to electric power transmission lines and risk of lymphoproliferative and myeloproliferative disorders: a case-control study. *Internal Medicine Journal* 37: 614-619.

Summary People who had lived within 300 m (1000 feet) of a power transmission line as children (0-5 years) had a fivefold increase in risk of leukemia & lymphoma compared with those who had always lived >300 m from a power line. Adults who had lived within 300 m of a power line during the first 15 years of life had a threefold increase in risk. People living within 50 m (164 ft) of a power line as adults had a twofold increase in risk, and those living 50-300 m had a 30% increase in risk.

Methods Case-control study of 854 patients diagnosed with LPD or MPD (including leukemia, lymphoma and related conditions) aged 0-94 years comprising all cases diagnosed in Tasmania between 1972 and 1980. Controls were individually matched for sex, approximate age at the time of diagnosis. Analyses were corrected for socioeconomic status and occupational exposure.

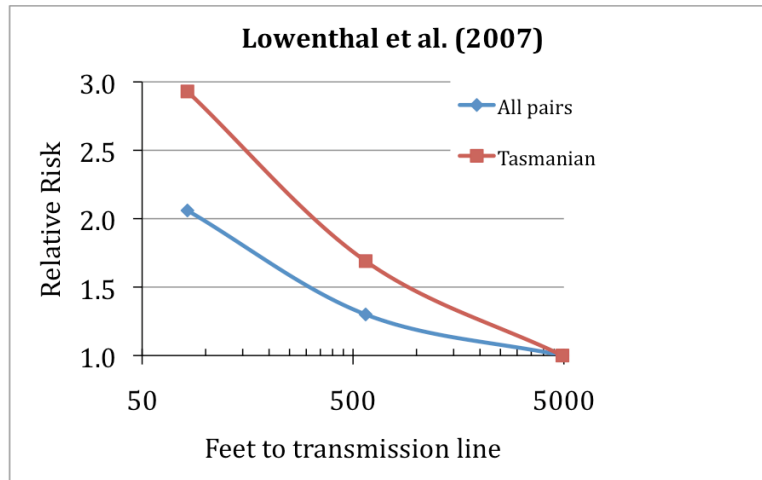


Figure 2. Relative risk of leukemia, lymphoma, and related conditions as a function of mean dwelling distance from a power transmission line. Data are shown for all people who ever lived near a transmission line. Risks for those who lived near lines as children are higher, 5 times baseline (not shown).

Draper G, Vincent T, Kroll ME, Swanson J (2005) Childhood cancer in relation to distance from high voltage power lines in England and Wales: a case-control study. *British Medical Journal* 330:1290.

Summary Children who lived within 200 m of a power transmission line from birth onward had a 70% elevation in risk of leukemia compared with those who lived > 600 m away. Those living between 200 and 600 m of a power line had a 23% elevation in risk of leukemia. There was a significant ($P < 0.01$) trend in risk in relation to the reciprocal of distance from the line. No excess risk in relation to proximity to lines was found for other childhood cancers.

Methods Researchers analyzed records of 29,081 children with cancer (malignant neoplasms and tumors of the central nervous system and brain), including 9,700 with leukemia. Children were aged 0-14 years and born in England and Wales, 1962-95. Controls were individually matched for sex, approximate date of birth, and birth registration district.

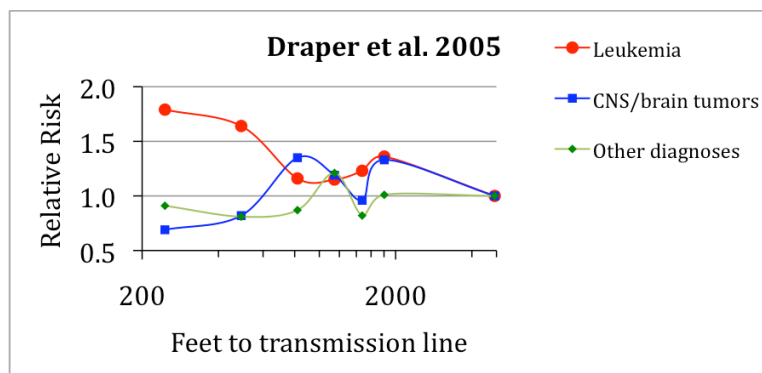


Figure 1. Relative risk of childhood cancers as a function of mean dwelling distance from a power transmission line.