



1: [Am J Ind Med. 2008](#) Aug; 51 (8) :579-86.

**A new electromagnetic exposure metric\*: high frequency voltage transients associated with increased cancer incidence in teachers in a California school.**

(\*Next-up organization : PLC - PowerLine Communication = PLT - PowerLine Telecommunication)

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BACKGROUND: In 2003 the teachers at La Quinta, California middle school complained that they had more cancers than would be expected.

A consultant for the school district denied that there was a problem.

OBJECTIVES: To investigate the cancer incidence in the teachers, and its cause.

METHOD: We conducted a retrospective study of cancer incidence in the teachers' cohort in relationship to the school's electrical environment.

RESULTS: Sixteen school teachers in a cohort of 137 teachers hired in 1988 through 2005 were diagnosed with 18 cancers. The observed to expected (O/E) risk ratio for all cancers was 2.78 (P = 0.000098), while the O/E risk ratio for malignant melanoma was 9.8 (P = 0.0008). Thyroid cancer had a risk ratio of 13.3 (P = 0.0098), and uterine cancer had a risk ratio of 9.2 (P = 0.019).

Sixty Hertz magnetic fields showed no association with cancer incidence.

A new exposure metric, high frequency voltage transients, did show a positive correlation to cancer incidence.

A cohort cancer incidence analysis of the teacher population showed a positive trend (P = 7.1 x 10<sup>(-10)</sup>) of increasing cancer risk with increasing cumulative exposure to high frequency voltage transients on the classroom's electrical wiring measured with a Graham/Stetzer (G/S) meter.

The attributable risk of cancer associated with this exposure was 64%. A single year of employment at this school increased a teacher's cancer risk by 21%.

CONCLUSION: The cancer incidence in the teachers at this school is unusually high and is strongly associated with high frequency voltage transients, which may be a universal carcinogen, similar to ionizing radiation.

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