

Brief Report

A Cluster of Male Breast Cancer in Office Workers

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Three cases of male breast cancer were diagnosed among a small group of men who worked in a basement office of a multi-story office building. This office was adjacent to an electrical switchgear room which generated high magnetic fields in their work space. The risk of male breast cancer in this group was increased about 100-fold (observe three cases, expect 0.03 cases; $P < 0.00001$). Since 1991, 15 epidemiologic studies have associated male breast cancer with exposure to electromagnetic field. Am. J. Ind. Med. 46:86–87, 2004. © 2004 Wiley-Liss, Inc.

KEY WORDS: *male breast cancer; office workers; electromagnetic fields*

Three men who worked in a basement office of a large municipal office building in the southwest US have been diagnosed with breast cancer in the last 10 years. The building was opened in 1985, and two of the men began working there that year. From the building's opening, problems with vibrating computer screen images were reported in this office. This led to the identification of an adjacent electrical switchgear room as the source of magnetic fields as high as 92 mG (milligauss) measured in this office. Most offices will have magnetic fields below 3 mG. The men recognized that it was unusual that three of them would develop the same rare disease and associated their disease with the office electrical environment. They sought legal counsel and I was retained as an expert witness.

Since no more than 200 men had ever worked in this office, a rough conservative calculation of expected cases of male breast cancer in this population would be 0.03 cases: (200 men followed for 20 years = 4,000 man-years; the average annual age-adjusted rate of male breast cancer in New Mexico over this time period was 7.5/1,000,000 [SEER Program, 2004], so $4,000 \times 7.5/1,000,000 = 0.03$).

Male breast cancer has been associated with electromagnetic field (EMF) exposure since 1991 [Matinoski et al., 1991]. A recent meta-analysis of fifteen male breast cancer / EMF studies [Erren, 2001] reported, "A fairly homogeneous increased risk for men . . ." with a pooled relative risk of 1.37 (95% confidence interval 1.11–1.71). Since most of these studies were of "electrical workers," the cluster of office workers reported here would fall into the non-exposed or comparison or control groups of these studies resulting in calculation of lowered risks.

Many office buildings have basement or first floor electrical rooms. Workers in offices near these rooms will have EMF exposures much higher on average than those of electrical workers [Stenlund and Floderus, 1997]. Another office worker cohort with similar EMF exposures

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showed increased cancer incidence and a positive trend of cancer cases with duration of employment [Milham, 1996].

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