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MORTALITY PATTERNS AMONG THE INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS, 1982-87. C.F. Robinson,* M. Petersen, S. Palu, J.P. Sestito (National Institute for Occupational Safety and Health, Cincinnati, OH 45226).

This study evaluated the mortality of 31,068 members of the U.S. Electrical Workers' Union who died 1982-1987. Age-adjusted proportionate mortality ratios (PMRs) and proportionate cancer mortality ratios (PCMRs) were computed using the U.S. age-, gender-, and race-specific proportional mortality for the years of the study. For white male electrical workers, significantly raised mortality was observed for lung cancer (PMR=117), mesothelioma (PMR=357), melanoma skin cancer (PMR=124), leukemia (PMR=115, benign tumors (PMR=234), asbestosis (PMR=248), electrocutions (PMR=1145), and all fatal injuries (PMR=116). When PCMR analysis was used, the risks for these cancers remained elevated. Among 114 white women electrical workers, mortality due to leukemia (PMR=195) and breast cancer (PMR=124) was elevated, but not significantly. More than 82% of all electrical workers studied had greater than 30 years membership in the union and worked in the construction industry. The study confirms that electrical workers have elevated proportionate mortality for asbestos related disease (lung cancer and malignant mesothelioma) and from traumatic injuries, particularly electrocutions. Elevated mortality from leukemia and melanoma skin cancer may be related to electrical work and suggests further evaluation of possible risk factors is needed.

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OCCUPATIONAL SUNLIGHT EXPOSURE AND MALIGNANT MELANOMA. K.W. Andrews,* D.A. Savitz, L.L. Kupper, R.C. Millikan, D.P. Loomis, T.E. Aldrich (University of North Carolina, Chapel Hill, NC 27516).

The chronic-intermittent sunlight exposure hypothesis suggests that intermittent and intense periods of brief exposure increase malignant melanoma risk while chronic exposure does not increase risk and may confer a protective effect. Occupational sunlight exposure was assessed both quantitatively and qualitatively in a large cohort of electric utility workers. Frequent exposure was defined as employment in an occupation where sunlight was estimated to occur at least 3 times per week for durations greater than 20 minutes. Occupations where exposure was thought to occur with less frequency or duration were considered to be intermittently exposed. While information on non-occupational sunlight exposure and some established risk factors was not available, we were able to control for age, social class, and polychlorinated biphenyls exposure. Frequent or total sunlight exposure was always associated with a decreased risk of malignant melanoma with rate ratios ranging from 0.2 to 0.9. Although the largest decreases in risk were often noted for the most highly exposed, workers with more than 15 years of frequent exposure had a mortality rate ratio of 0.3 (95% confidence interval: 0.2-0.6), clearly defined dose-response relationships were not observed. The large decreases in mortality observed for moderate amounts of intermittent exposure, with rate ratios ranging from 0.2-0.5, did not appear to be extended to the highest exposure categories.

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HEARING LOSS AMONG CONSTRUCTION WORKERS IN EDMONTON, CANADA. P.A. Hessel,* L.S. Melenka (University of Alberta, Edmonton, Alberta, Canada T6G 2G3).

Construction workers are exposed to a number of noise sources including power and hand tools, compressors, engines and others. Three groups of construction workers were tested: 100 electricians, 99 plumbers/pipe-fitters, and 102 boilermakers. Each group was compared to 100 tele-phone workers. The workers were selected randomly from all members of the respective unions with 20 + years of membership. Audiometric testing was conducted using a Maico, MA- 27 audiometer with Ear Links. A soundproof booth was not available, however, the background noise levels were below recommended maximums. Average hearing thresholds for the electricians and telephone workers were comparable and were similar to "expected" thresholds as determined by the US National Institute of Occupational Safety and Health. The plumbers and pipefitters had significantly greater hearing thresholds than the telephone workers for both ears at frequencies of 3000 Hz and above. The average hearing thresholds at 4000 Hz were 38.3 and 36.5 dB for the left and right ears, respectively. Hearing thresholds for the boilermakers were significantly greater than those of the telephone workers at frequencies greater than 2000 Hz for both ears. Average thresholds at 4000 Hz were 44.0 and 41.0 for the left and right ears, respectively. Two of the telephone workers, four of the electricians, six of the plumbers and pipefitters and 21 of the boilermakers had hearing loss that would meet the minimum requirements for compensation under local criteria.

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WHAT CAUSES PULMONARY TUBERCULOSIS TO RECUR? A POPULATION-BASED STUDY IN SOUTH CAROLINA, 1970-95. A. Selassie,* F. Sy, C. Pozsik (The University of South Carolina, Department of Family and Preventive Medicine, SC 29425).

The objectives of this study were to determine the demographic characteristics and factors accountable for recurrent tuberculosis. The authors identified 260 individuals (Cases) who developed the disease again after 12 months have elapsed since discharge from previous supervision from the Statewide Tuberculosis Registry (STR), 1970 through 1995. Two hundred sixty individuals who did not develop the disease again (Controls), were then selected from the STR matched with cases by year of diagnosis using a systematic sampling protocol. Information on variables of interest was abstracted from the tuberculosis charts. The effect of these variables on recurrence was evaluated using logistic regression procedure. After controlling for the effects of demographic characteristics and other documented risk factors, those with recurrence were 7.7(95% confidence interval (CI) 4.5-13.5) times more likely to have been treated without INH and Rifampin combination, 3.1 (95% CI 1.9-4.9) times more likely to have been noncompliant than those with no recurrence. In this study, demographic characteristics such as race, sex, age, and employment status, and other underlying chronic ailments such as diabetes have no effect on recurrence. The findings of this study indicate the need to adhere to the recommended treatment regimens and to institute measures that can improve compliance such as prompt home visits and directly observed therapy.

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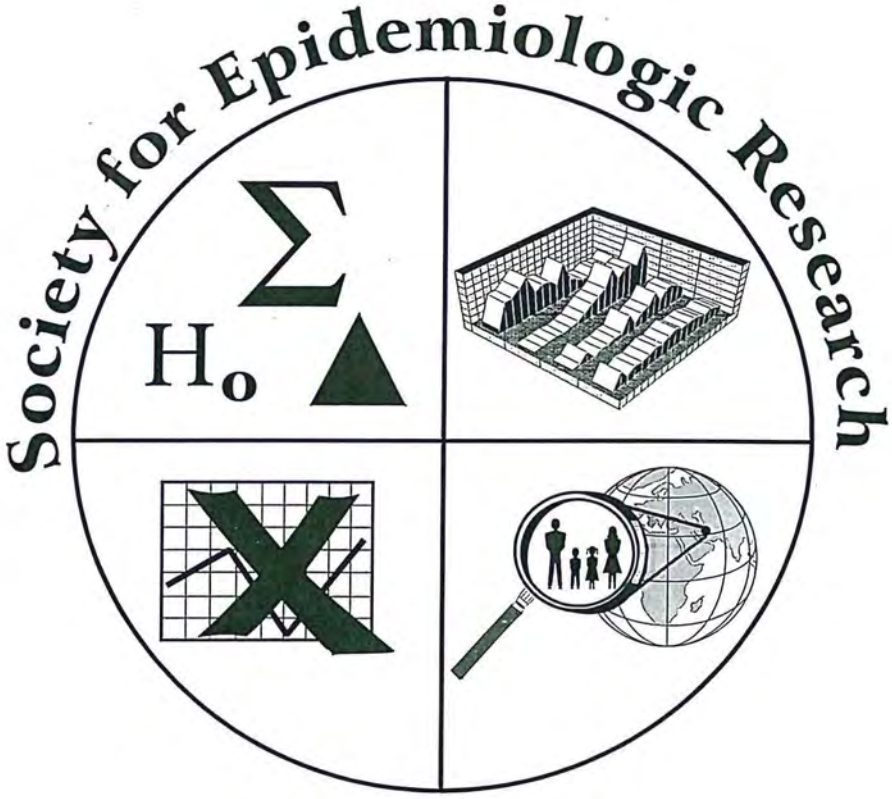

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