

LYMPHATIC CANCERS AND LEUKEMIA AMONG PLUTONIUM WORKERS

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ABSTRACT

Recent studies of cancer incidence and mortality among plutonium workers suggest elevated risks for certain lymphatic cancers and leukemias. An investigation of cancer incidence among Los Alamos National Laboratory male employees resulted in standardized incidence ratios of 2.49 (90 per cent confidence limits: 0.98, 5.23) when compared with cancer rates for the state of New Mexico. A study of mortality among 5413 white males employed for at least two years at a plutonium weapons production facility found fewer deaths than expected for all causes of death, all cancers and lung cancer when compared with U.S. death rates. No bone cancer was observed; however, an excess of brain tumors was found for the cohort in general. Comparisons of plutonium burdened with unburdened workers showed elevated rate ratios for all lymphatic and hematopoietic cancers combined (RR = 9.86, 90 per cent confidence limits = 1.26, 94.03) and for all causes of death combined (RR = 1.33, 90 per cent confidence limits = 1.05, 1.68) at 5 years induction time. Rate ratios were also suggestively elevated for esophageal, gastric and prostatic cancers. Although standardized rate ratios for several causes of death at several induction times increased with increasing exposure category, no overall linear dose response trends were found. These findings imply that increased risks for several types of cancers cannot be ruled out at this time for plutonium burdened individuals.