

**MESOTHELIOMA INCIDENCE AND COMMUNITY ASBESTOS EXPOSURE**  
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**ABSTRACT**

The purpose of this study was to evaluate the incidence of mesothelioma among persons living in an area that had been the location of an asbestos manufacturing plant between 1912 and 1980. Two study designs were used: standardized incidence ratios and a case-control format. Only vital record data were used in this project.

Cases were the 110 diagnosed mesotheliomas among residents in Somerset County reported to the population-based New Jersey State Cancer Registry from 1979 through 1987. Cases were removed from the analysis when their "usual employment" was reported as being at the asbestos plant, as evidenced through union lists or occupational information from either the Cancer Registry or mortality records.

Standardized Incidence Ratios (SIR) were computed for total Manville residents, and for males and females separately. Average annual New Jersey mesothelioma rates, 1979-1986, were used to generate the expected number of mesothelioma cases. The SIR for the total Manville population was 14.9 (95% Confidence Interval [C.I.]: 9.1-23.1). Female Manville residents had a mesothelioma SIR of 29.7 (95% C.I.: 11.9-61.3). Male Manville residents had a mesothelioma SIR of 11.4 (95% C.I.: 6.1-19.5). Total and male Somerset County mesothelioma incidence were slightly elevated compared to the State rates.

Controls for the case-control study design included the 1,016 selected cancers deemed unrelated to asbestos exposure. The controls were also residents of Somerset County at time of diagnosis and diagnosed during the same time period as the cases. Using logistic regression analysis, explanatory variables included town of residence, age at diagnoses, and year of diagnoses stratified by sex. For males, residence in Manville had an odds ratio of 6.4 (95% C.I.: 3.0-13.5) compared with residence in other county locations. For females, the odds ratio for residence in Manville was 31.7 (95% C.I.: 8.7-116.1).

These record-based approaches demonstrate a strong relationship between past asbestos exposure from living in Manville and eventual development of mesothelioma. The use of such study designs may be helpful in evaluating hazards of known occupational carcinogens found in community settings.