

FILE NAME: Asbestos Mining (ASMI)

DATE: 2000

DOC#: ASMI035

DOCUMENT DESCRIPTION: Journal Article from Archives of Environmental Health [Authors - Egilman & Reinert]

Egilman and Reinert, Arch. Env. Hlth. 55:75-76 (2000).

To the Editor—"Corruption of Previously Published Asbestos Research." The history of the corruption of research focused on the health effects of asbestos is well documented.¹⁻³ One study, changed at the request of asbestos companies, appeared in the pages of the predecessor to the *Archives of Environmental Health*.⁴ We are, therefore, writing this letter to correct the record with respect to the aforementioned study.

In the early 1950s, the Quebec Asbestos Mining Association (QAMA), an industry trade group, asked the Industrial Hygiene Foundation to perform a mortality study of asbestos miners in the Province of Quebec. In this study, which was drafted in 1957, investigators reported that the miners had a statistically significant excess of lung cancer associated with asbestosis. A portion of this draft read as follows: "The number of lung cancer deaths combined with asbestosis is larger than would be expected in each cohort and in the combined cohorts. This difference is significant at the 95% level using the chi-square test of significance."

The aforementioned data (i.e., the conclusion that lung cancer was related to asbestos exposure) were never published. In fact, the authors published the opposite conclusion! In a comment on the draft, Dr. Kenneth Smith, medical director for the Johns-Manville Corporation (i.e., one of the sponsoring companies), noted the following in a letter to Ivan Sabourin, an attorney who worked for QAMA: "Hugh Jackson and I have reviewed the condensation of the survey which was sent us. We have noted deletion of all references to the association of asbestosis and lung cancer in this condensation. While we believe that this information is of great scientific value, we can understand the desire of the QAMA to emphasize the exposure of the asbestos miner and not the cases of asbestosis. We are also in agreement with the deletion of the reference to smoking and lung cancer. It must be recognized, however, that this report will be subjected to criticism when published because all other authors today correlate lung cancer to cases of asbestosis" [emphasis added].

To achieve the (incorrect) conclusion desired by their corporate sponsors, the authors manipulated the statistics to conclude that there was no significant increased risk of lung cancer associated with asbestos work. The

authors included workers without asbestosis in the study group (i.e., thus diluting the effect of the "heaviest" exposures), and they used an inappropriate control group to calculate the expected rate of lung cancers. Instead of using available lung-cancer rates from the eight counties surrounding the asbestos mines, researchers used rates from the Province of Quebec. If expected rates were calculated from data from the eight surrounding counties, even with manipulation of the denominator a statistically significant excess would have been found (Table 1).

In addition, the rate of lung cancer among nonasbestotics exposed to asbestos was greater than expected. Although this analysis was not performed in the original study, a chi-square analysis of the original data for the Thetford Cohort is revealing. Among 3,546 miners without asbestosis, 5 developed lung cancer between 1950 and 1955. In the eight counties adjacent to Thetford, 54 men developed lung cancer between 1950 and 1955 (the population of the counties in 1952 was 97,600). The resulting relative risk was 2.55 ($p = .038$ [Table 2]). The data are qualified by the fact that

Table 1.—Comparison of Observed Lung Cancer Cases with Expected Lung Cancer Cases

Variable	Exposed	Nonexposed	Totals
<i>Observed</i>			
LC	9	54	63
No LC	5,914	97,546	103,460
Totals	5,923	97,600	103,523
<i>Expected</i>			
LC	3,604.503	59.3955	63
No LC	5,919.395	97,540.6	103,460
Totals	5,923*	97,600*	103,523
RR = 2.55 $p = .00341$			

Notes: LC = lung cancer, and RR = relative risk.
*Rounded to next whole number

Table 2. Comparison of Observed Lung Cancer Cases Without Asbestosis in Thetford Cohort with Expected Lung Cancer Cases

Variable	Exposed	Nonexposed	Totals
<i>Observed</i>			
LC	5	54	59
No LC	3,541	97,546	101,087
Totals	3,546	97,600*	101,146*
<i>Expected</i>			
LC	2.068436	59.93156	50
No LC	3,543.932	97,540.07	101,087
Totals	3,546*	97,600*	103,523*
RR = 2.55; <i>p</i> = 0.3792			

Notes: LC = lung cancer, and RR = relative risk.

*Rounded to next whole number

diagnosis of asbestosis in this population may not have been accurate. In the draft, Braun speculated that asbestosis had been underdiagnosed in this population (perhaps by the corporate doctors to minimize compensation payments). Therefore, in this group of nonasbestotics, some may have had fibrosis of the lung attributable to asbestos exposure.

This study had a minimal impact on the medical literature, but it continues to influence asbestos litigation. One author referenced this study in a book written in

1960 to support the assertion that "asbestos had not been found to be carcinogenic." At that time, Dr. Smith wrote that it was clear to "all" researchers that asbestos caused lung cancer. Lawyers for asbestos companies use the corrupted Braun and Truan study to argue that the relationship between asbestos and lung cancer is unclear or controversial—as late as 1960. This cynical circle of events, in which companies that first changed the Braun and Truan paper to suit their needs and now attempt to rely on the corrupted study to escape liability in court, is ironic—but not unique—in the history of asbestos litigation.

References

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David Steven Egilman, M.D., M.P.H.

Clinical Assistant Professor

Brown University

Braintree, Massachusetts

Alexander Reinert

Cambridge, Massachusetts