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Exposure to Talc Dust May Be Related To Deaths of Workers, Health Unit Says

Nov. 2, 1976

By Gail Bronson
Staff Reporter of The Wall Street Journal

Investigators from the National Institute for Occupational Safety and Health, or NIOSH, have found that the deaths of 17 Vermont talc workers, six of them from lung cancer, may be related to workers' exposure to talc dust.

The unpublished study is the first to focus on worker hazards in the mining and milling of "relatively pure" talc. Previously, talc ore in combination with asbestos, a known carcinogen, has been the focus of other inquiries. In 1972 NIOSH recommended lowering worker exposure to asbestos, and since then concern has been voiced about production of nonasbestos talc. Vermont was chosen as the study site because its mining operations process relatively pure talc.

Relatively pure talc is used in a variety of industrial and consumer products, including talcum powder and cosmetics, asphalt and plastic filler. Investigators emphasize that their study addresses only the hazards of working with the raw material and in no way suggests any danger to consumers using talc products.

The three companies that own the talc operations studied are Johnson & Johnson, Engelhard Minerals & Chemicals Corp. and Vermont Talc Co.

The work histories of 405 men who were employed between 1940 and 1970 until their deaths or the end of the study were reviewed. The actual amount of time the men were exposed to the ore and the period of employment thereafter were among the factors considered. The study relates only to exposure during the 30-year period and doesn't reflect current levels of exposure to talc dust.

Six lung-cancer deaths were found, four among miners and two among combination miners and millers. Apparently, lung disease may develop as early as 15 years after initial exposure and cancer is discernible some 30 years after initial exposure. Eleven workers died from nonmalignant respiratory diseases, such as chronic emphysema and bronchitis. Five of these men were millers, one was a miner and the others were combination workers.

Higher-Than-Expected Rate

Scientists say the 17 deaths are many more than the expected deaths calculated from national death rates and Vermont death rates for respiratory diseases. Based on the study, Vermont has a 30% higher-than-expected number of deaths from nonmalignant respiratory disease and a 12% greater-than-expected death rate from respiratory cancer, when compared with the total U.S. population.

"The present study clearly demonstrates that nonmalignant (lung) disease (excluding pneumonia or influenza) is associated with exposure to 'relatively pure' talc," says federal epidemiologist Sherry Selevan. "The study shows a high statistical association between exposure and excess, nonmalignant disease. It doesn't prove it's the cause, but it is strongly implicated," she says.

"Right now there is no clear explanation for the excess of respiratory-tract cancer which was found, but investigation is continuing," she adds.

Strangely, the respiratory cancer was found primarily in the miners, who have less exposure to the talc than do the millers. Scientists believe there may be something else in the mine environment that contributed to the cancer deaths other than the talc itself.

The Harvard School of Public Health is conducting a morbidity study of the current talc workers in Vermont to determine the degree of nonmalignant respiratory disease. The study involves interviews with workers, review of their pulmonary functions, X rays and other medical records. Preliminary data should be available in about six months.

Out-of-Date Guides

The current talc dust exposure standard of 20 million particles per cubic foot of air was set in 1970. However, this standard was merely a holdover based on a study in the 1940s by the American Conference of Governmental Industrial Hygienists. As a result, the standard is out of date.

"We are using more sophisticated air sampling procedures to get an idea of current dust levels in mines," says John Dement, NIOSH industrial hygienist. "Dust exposure in mines declined dramatically in 1970 when plants installed new ventilation systems and implemented wet drilling procedures. But the level of safety remains to be determined," he says.

The NIOSH air-sampling data will be used with the data collected by Harvard eventually to update the air-quality standards for talc mining.

Spokesmen for Johnson & Johnson and Engelhard Minerals say the levels of dust exposure in their mines are "well below" the government standard. "We are comforted by our interpretation of the epidemiological information," says the Engelhard spokesman. "We've been able to keep the dust levels to one-tenth of the accepted federal standard," adds a Johnson & Johnson spokesman. Vermont Talc Co. wasn't immediately available for comment.

Nonetheless, federal officials still believe there is cause for concern. "We know that high levels of exposure cause disease," says Mr. Dement, "but we currently don't know what the toxic level of exposure is. We're concerned that talcs with toxic materials should be labeled as such, especially when they are used in other industrial materials."

A spokesman for the United Cement, Lime and Gypsum Workers Union, which represents many of the mine workers, says, "It's (the study) another indication that when people are breathing an excess of any mineral dust, lung problems develop."

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