



January 21, 1972

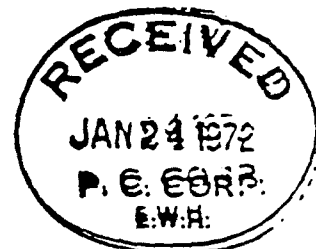
Mr. E. W. Holman  
Pittsburgh Corning Corporation  
Gateway 3

The attached is an EPA position statement on asbestos made at  
a public hearing in New York on January 18, 1972.

A handwritten signature in black ink, appearing to read "Lee B. Grant, M.D.".

Lee B. Grant, M.D.  
Medical Director

LBG:lc  
Attachment



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HEALTH HAZARDS OF AIRBORNE ASBESTOS

The following statement is a brief summary of those aspects of the toxicology of asbestos which establish it as a hazardous air pollutant. A hazardous air pollutant is defined by section 112 of the Clean Air Act of 1970 as one: "to which no ambient air quality standard is applicable and which in the judgment of the Administrator may cause, or contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness."<sup>1</sup>

The diseases which have been related to the inhalation of asbestos by humans include asbestosis and malignant tumors of the lung, pleura and peritoneum. Of these, asbestosis was the first to be associated with exposure to asbestos. Asbestosis is a non-malignant lung disease which results in an x-ray pattern of diffuse interstitial fibrosis and physiologic changes consistent with a restrictive lung disorder.<sup>2</sup> The disease is often lethal in severe cases. However, prolonged exposure to asbestos concentrations far above those likely to be found in community air is required to produce clinically significant (i.e. incapacitating) asbestosis.<sup>2</sup>

An association between asbestos exposure and carcinoma of the lung was first firmly established by epidemiologic evidence reported in 1947.<sup>3</sup> The data indicated that bronchogenic carcinoma was present in 13.2 percent of 235 persons known to have died with asbestosis.<sup>3</sup> In the years since 1947, numerous other studies have confirmed this

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relationship between asbestos exposure and lung cancer.<sup>4-17</sup> One study showed that asbestos workers who smoke are 92 times as likely to develop lung cancer as non-asbestos workers who do not smoke.<sup>15</sup> (Should exposures in the general population approach those in occupational situations a considerable increase in mortality and morbidity of lung cancer could be produced.) However, whether nonoccupational exposures to asbestos play a role in the development of bronchogenic carcinoma has not been adequately studied. The Panel on Asbestos of the National Academy of Sciences has evaluated the existing literature on asbestos. According to their review the only tumor associated with nonoccupational asbestos exposure is diffuse mesothelioma.

Mesotheliomas, primary malignant tumors of the pleura and peritoneum, however, are serious. In 1960 Wagner et al.<sup>18</sup> reported 33 cases of pleural mesothelioma from South Africa. A history of asbestos exposure was established for all but one patient. Only 17 of these were occupationally exposed. The remaining patients lived in the vicinity of an asbestos mine or had household contacts with miners. Numerous other reports linking mesothelial malignancies to asbestos exposure have been published since 1960.<sup>8,9,10,14,19-27</sup>

This argues strongly for a causal association. Thus several types of exposure to asbestos have been associated with mesotheliomas including: 1) occupational exposure to asbestos, 2) employment or residence near an asbestos industry, 3) household contact with an asbestos worker, and 4) no known exposure. For example, Newhouse and Thompson<sup>26</sup>

reviewed a series of 83 patients whose mesotheliomas were diagnosed at the London Hospital between 1917 and 1964. The authors were able to obtain full occupational and residential histories for 76 patients in the series. They found that 31 (40.8%) had occupational exposures to asbestos, 9 (11.8%) lived in the same house as an asbestos worker, 11 (14.5%) had no history of occupational or household exposure but lived within half a mile of an asbestos factory and 25 (32.9%) had no known exposure. Of the 25 with no known exposure, four were found to have asbestos bodies in their lungs. Corresponding percentages for a group of matched control subjects were: occupational exposure - 10.5%, household exposure - 1.3%, neighborhood exposure - 6.6%, and no exposure - 81.6%. These findings strongly implicate asbestos as a causal factor in this disease.

Many case reports of mesothelioma include persons who have worked in the shipbuilding and construction industries at jobs that do not involve direct contact with asbestos.<sup>28</sup> Thus, it is apparent that indirect occupational as well as nonoccupational exposure to asbestos may contribute to the development of mesothelioma. Accurate characterization of previous asbestos exposure in individuals who subsequently develop mesothelioma is difficult because of the prolonged latent period between exposure and the onset of disease. The prognosis of malignant mesotheliomas is extremely poor. In one large series of malignant mesotheliomas<sup>26</sup> the average duration of life following the onset of symptoms was only 16.4 months.

In conclusion, the Panel on Asbestos of the NAS has stated:  
"Because of the known serious effects of uncontrolled inhalation of asbestos minerals in industry and uncertainty as to the shape and character of the dose-response curve in man, it would be highly imprudent to permit additional contamination of the public environment with asbestos. Continued use at minimal risk to the public requires that the major sources of man-made asbestos emission into the atmosphere be defined and controlled. In the absence of such controls, local fiber concentrations might at times approach those in occupational sites. Analytic methods and epidemiologic data are not yet adequate for the development of an ambient air standard, but emission controls are needed and appear to be feasible."<sup>29</sup>

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### Asbestos References

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