

MEMORANDUM

002862

Silicosis - Asbestosis

Johns-Manville Corp. under date of December 1, 1950 in Somerville, New Jersey, in defense of the petition of Mr. John Haines alleging asbestosis had Dr. Pendergast of the University Hospital, Philadelphia, Dr. Bristol, radiologist, Dr. Arthur Vorwald of Trudeau Foundation and Dr. Lanza of Bellevue Medical Center testify.

Dr. Pendergast stated that asbestosis was lung changes produced by inhalation of magnesium hydrated silicate. These changes are probably due to the larger fibers (contrary to silicosis) which get into the respiratory bronchial nodes and cause outpouring of cells. The smaller size fiber tended to be engulfed by these cells and at the same time set up a fibrosis collar around the smaller bronchi and might also set up an infectious field in the lung. The changes occur not only in the lung, primarily in the lower lung field, (where adjacent to moving parts), but also the pleura and the covering of the heart. The x-ray must show fibrotic changes and manifest thickening of the pleura and the covering of the heart, and generally was associated with right heart failure. The vertical diameter of the chest would be less and there would be clinical signs of shortness of breath. For diagnosis it was necessary to have

- (1) history of exposure.
- (2) exposure of abnormal amounts of dust.
- (3) positive clinical findings - dyspnea.
- (4) positive x-ray findings indicating a ground-glass appearance particularly in the lower lung fields. There are generally no nodular shadows unless there may have been silica present in the dust.

Differentiating, he stated that the x-ray appearance of silica showed

- (1) even nodular distribution.
- (2) conglomerate masses due to cohesion of nodules.
- (3) distribution in the upper two-thirds of the chest.
- (4) increase in vertical diameter of the chest.
- (5) questionable presence of right heart failure.

He stated he did not know if there was individual idiosyncrasy to pneumoconiosis.

Dr. Arthur Vorwald testified as a pathologist and stated that the x-ray appearance of asbestosis is characterized by

- (1) uniform shadows at the lower one-third of both lung fields which may extend to the middle;
- (2) there may be involvement of the pleura, the sac about the heart and the diaphragm of the lung.

He stated there is no correlation between the sputum and what might come on in the lung itself due to the bodily defenses, particularly in the mucous membrane of the throat and trachea. He states his studies of 60% of the individuals exposed to known concentrations of dust contract asbestosis.

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Asbestosis is a clinical entity produced by the inhalation of asbestos dust over a prolonged period of time pathologically, by the production of fibrous tissue in the lung clinically, by the production of shortness of breath, coughing, diminished vital capacity of the lung and by the definite pattern ~~produced~~ in the x-ray film. This pattern can be described as involving the lower parts of the lung setting-up a pattern which can be described as a ground-glass appearance. Also involves the pleura producing a thickening and involves the area which covers the heart tending to involve the lung which covers the heart producing a picture which we call "shagging" so that the heart instead of being rounded is irregular.

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