

FILE NAME: ALCOA (ALC)

DATE: 1956 Feb

DOC#: ALC038

DOCUMENT DESCRIPTION: Abstract – Journal Article – Industrial
Hygiene Digest

November 1993

IN RE: ABRAMS



WHD-00171.C1

Industrial Hygiene Digest

INDUSTRIAL HEALTH NEWS

LITERATURE ABSTRACTS

MEDICAL

ENGINEERING

CHEMICAL

TOXICOLOGICAL

LEGAL ... decisions and trends

FEBRUARY, 1956

(Vol. 20, No. 2)

INDUSTRIAL HYGIENE FOUNDATION

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in the capillary surface. In the evaluation of large numbers of cases, although not in individual cases, there is a certain parallel between the radiographic changes and the severity of functional disturbances. The examination of lung function, especially by work tests, gives an objective criterion for assessment of incapacity, so that remedies may be applied, varying from removal from exposure to inhalation therapy and cardiac treatment, according to the stage of silicosis. In countries where silicosis is compensable as a disease, the system leads to late diagnosis depending on x-ray examination, when severe functional disturbances have already occurred. In Switzerland silicosis is compensable, not as a disease, but only through resulting incapacity for work; this leads to early diagnosis and exclusion of the patients from exposure. In early diagnosis the investigation of respiratory function is highly important. Hence the aim is to distinguish the limits of disturbances of function due to silicosis from those due to accompanying diseases. The basis of all research on respiratory function is spirometry and analysis of the gases in the arterial blood. The technique used in the investigations is described. A classification is given of the different disturbances of lung function and these are discussed very thoroughly. Assessment of capacity for work is made on the results of functional tests. Limiting criteria for this assessment are given. A study of 46 silicotic workers showed that, after at least four years' freedom from dust exposure, radiographic appearances had not changed for the worse in more than half of the patients, and in about half lung function and capacity for work were either improved or maintained. -- Cond. from Bull. Hyg.

- 248 Investigations on Breathing Capacity in Silicosis by Means of Oximetry During Work. E. Sartorelli and Eleonora Giorgi. *Med. lavoro* 45, 600-607 (Nov. 1954). Italian.

The procedure used in oximetry is described and results in 30 persons, normal and silicotic, are presented. In all the seven cases with silicosis in various forms, anoxemia appeared for lighter work-loads than in normal cases of the same age. The onset of severe anoxemia was noted even during light work-loads in two cases of nodular silicosis with severe emphysema and chronic cor pulmonale. Oximetry during work, as proved by the results obtained, is a method of undoubted practical utility for the study of the respiratory function. Compared with other methods by which the behavior of blood oxygen saturation is studied only indirectly, oximetry during work presents the following advantages: (1) the appearance of anoxemia is recorded directly; (2) the research is very rapid; and (3) the examination is better tolerated by the patients, because during work they are allowed to breathe freely without the use of a mouthpiece or a mask.

-- Cond. from English summary (Bull. Hyg.)

- 249 The Reaction of Middlebrook-Dubos in Silicosis and Silicotuberculosis among Coal Miners. J. Poignot. *Arch. belges med. sociale, hyg.* 13, 17-25 (Jan. 1955). French.

The reaction of Middlebrook-Dubos is concerned with the agglutination of red cells sensitized with tuberculin, by serum dilutions of 1 in 16 or more. Certain modifications, fully explained, were used in a study of 82 silicotic coal miners, of whom 18 were tuberculous, and 16 with tuberculosis without pneumoconiosis. Positivity of the reaction was found to depend upon the presence of tuberculosis rather than silicosis. The low proportion of positive reactions in advanced silicosis does not support the widely accepted claim that the passage from isolated nodules to more advanced confluent silicosis depends upon a superimposed tuberculous infection. The reaction may thus contribute evidence in the differential diagnosis between miliary tuberculosis and micronodular silicosis.

-- Cond. from Bull. Hyg.

- 250 Carcinoma of the Lung in Asbestosis: Report of Two Additional Cases. K. H. Lynch and H. R. Pratt-Thomas. *Southern Med. J.* 48, 565-568 (June 1955).

The evidence of correlation between the occurrence of asbestosis and of lung cancer is collected. No such correlation has been found with other forms of pneumoconiosis like silicosis and anthracosis, or pulmonary tuberculosis. The pathology of asbestosis is abnormal; it seems to be due to traumatism between large particles of asbestos, too large to penetrate into the alveoli, and the pulmonary tissues, while other pneumoconioses present reactions between minute particles and the living tissues. Further, no efforts to induce lung cancers in animals exposed to asbestos dust have been successful. Nevertheless, the statistical evidence is strong. Two additional cases of lung cancer associated with

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asbestosis are reported. In both cases x-ray examination showed the diffuse granular infiltration over both lungs characteristic of asbestosis and the lungs after death exhibited the fibrosis distinctive of asbestosis; but both patients succumbed to bronchogenic carcinoma. The appearances of the lesions are illustrated. The authors have seen four cancer cases in 49 autopsies of asbestos, 8.2%, compared with 0.7 to 2.4% in autopsies taken at random. -- Bull. Hyg.

- 251 Asbestosis and Pulmonary Carcinoma in an Asbestos Spinner. Notes on the Induction of Lung Cancer by Asbestos Fibers. G. Rombola. Med. lavoro 46, 242-250 (Apr. 1955). Italian.

The first case of pulmonary carcinoma occurring in Italy in a subject affected by slight asbestosis is described. The diagnosis formulated in life was confirmed by autopsy, the gross and microscopic findings of which are briefly reported. The present clinical, pathological, and statistical knowledge on the capacity of asbestos to cause tumors is summarized. Statistical data are abundant, but experimental studies are few and not concordant. The author believes that a study should be made to determine how the capacity of the different types of asbestos to cause tumors differs according to their chemical composition.

-- Cond. from English summary (Bull. Hyg.)

- 252 Peritoneal Tissue Reactions Produced by Various Kinds of Carbon and Coal Dusts in the Rat. H. Sakabe and T. Chi. Bull. Inst. Public Health (Japan) 4, 18-22 (June 1955).

Peritoneal reactions in rats produced by various carbon and coal dusts were studied. The results showed that the natural and artificial graphites free from silica produced a fibrosis or granuloma on the peritoneum of rats, although far more feeble than the tissue reactions produced by quartz dusts. The more the graphitization of carbon dust progressed, the more the resulting tissue reaction became severe. The tissue reactions by graphite dusts were variable according to the type of graphite. Carbon black could not be assumed to be completely inert except types of large spherical carbon black. Potency of coal dusts for tissue reactions may lie somewhere between natural graphite and carbon black, but a difference of tissue reactions among various coal dusts was not demonstrated in this study.

-- Public Health Eng. Absts.

- 253 The Effect of Various Forms of Alumina on the Lungs of Rats. E. J. King, C. V. Harrison, G. P. Mohanty, and G. Nagelschmidt. J. Pathol. Bacteriol. 69, 81-93 (1955).

When introduced into the lungs of rats, powdered hydrated alumina and aluminum phosphate of small particle size produced reticulonodules. In the case of alumina, the nodules developed into areas of dense collagenous fibrosis. There was a slow dissolution of aluminum hydroxide into the surrounding tissues as shown by aurine staining of sections. The amount of alumina found in the lungs was less in the animals which survived longest. Condensed fumes from a corundum furnace, which consisted approximately of half finely divided alumina and half silica, produced a much less severe fibrosis, but there was a notable exudative reaction in the lungs and several animals died during the course of the experiment. This dust was partially eliminated from the lungs of animals during the 12 months of the experiment. The doses of dust used to produce these results are mostly in excess of those which have been used in the prophylaxis of human silicosis.-- Chem. Absts.

- 254 Baker's Rhinitis and Asthma. C. Pestalozzi and U. W. Schnyder. Schweiz. med. Wochschr. 85, 496-501 (May 21, 1955). German.

A study was made of the prevalence, symptomatology, course, sensitization, and spontaneous desensitization and the family disposition in baker's rhinitis and asthma. Of 159 bakers in Zurich, 42 had allergic symptoms of the respiratory tract; 36 had rhinitis only and six also had bronchial asthma. Skin tests with flour extracts gave positive reactions in 24 of the rhinitis cases. The rhinitis is apparently due to a flour allergy, but other factors must be considered the cause of the asthma.

-- Cond. from Bull. Hyg.

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