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ABSTRACT NUMBER			FC	FILE NUMBER
31:1 2/65				753

AUTHOR: W. J. Williams

TITLE: Asbestosis and Lung Cancer

ORIG. REPT.	VOL.	PP.	DATE	ABSTR. REPT.	VOL.	PP.	DATE
Arch. Envir. Health	10	44-45	Jan. 1965				

ABSTRACT

This report records 52 American cases of asbestosis among whom there were 10 patients with malignant tumors, an incidence similar to that reported in Britain. There are 17 references.
-- Author's conclusion

CON'D

ABSTRACT NUMBER	DATE			FILE NUMBER
1/66		72	NFC	753

AUTHOR: P. C. Elmes, W. T. E. McCaughey, and O. L. Wade.

TITLE: Diffuse Mesothelioma of the Pleura and Asbestos.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Brit. Med. J.	1	350	Feb. 6, 1965	J. Occ. Med.	7	541	Oct. '65

ABSTRACT:

Mesothelioma of the pleura is an uncommon tumor and, in recent years, studies have indicated a relationship of this tumor to exposure to asbestos. The occupational histories of 42 patients with diagnosed mesothelioma were contrasted to 42 control patients with regard to their exposure to asbestos. Thirty-two of the 42 patients with diagnosed mesothelioma had a history of exposure to asbestos which was considered to be heavy exposure in eight and a light exposure in 24. In the 42 control patients there was a history of exposure in only nine, and in two of these it was considered heavy. The difference between these two groups was highly significant. In another study it was shown that the finding of asbestos bodies in lung tissue was significantly related to the history of industrial exposure to asbestos. When the lungs of 24 patients with diagnosed mesothelioma were examined for the presence of asbestos bodies, 21 of the 24 patients showed this finding. In contrast, asbestos bodies were found in only six of the 24 controls, a highly significant difference. The occupational histories of these patients revealed that the interval between the first exposure to asbestos and the diagnoses of mesothelioma was often long and in some cases exceeded 40 years. Exposure to asbestos, even though many years before and transient, is an important factor in the development of mesothelioma of the pleura. -- J. Occ. Med. Absts.

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			FILE NUMBER
		NEC	753

AUTHOR: J. F. Cordova, H. Tesluck and K. P. Knudtson

TITLE: Asbestosis and carcinoma of the lung.

ORIG. REF'S.	VOL.	PP.	DATE	ABSTR. REF'S.	VOL.	PP.	DATE
Cancer	15	1181	Nov. - Dec. 1962	JAMA	182	adv 229 P	11/10/62

ABSTRACT:

Eleven cases of asbestosis associated with carcinoma of the lung are presented. A known exposure to asbestos dust was obtained in 7 of these cases. In 2 cases, evidence is presented for multifocal origin of the malignant tumor. The relationship of asbestos bodies as a carcinogen in the production of lung cancer is discussed.

--J. Am. Med. Assn. References & Reviews

CON'D

ABSTRACT NUMBER	DATE			FILE NUMBER
	1/66	73	MFC	753

AUTHOR: I. J. Selikoff, J. Churg, and E. C. Hammond.

TITLE: Relation Between Exposure to Asbestos and Mesothelioma.

ORIG. REFR.	VOL.	PP.	DATE	ABSTR. REFR.	VOL.	PP.	DATE
New Engl. J. Med.	273	560	Mar. 18 1965	J. Occ. Med.	7	542	Oct. '65

Ten deaths due to mesothelioma were found in a study of 307 consecutive deaths among asbestos-insulation workers in New York and New Jersey. There were four pleural mesotheliomas (1.3%) and six peritoneal mesotheliomas (1.9%). This is probably an underestimate of the true incidence, since, of the remaining 297 deaths, only 110 cases were autopsied. These figures can be contrasted to a prospective study of the American Cancer Society in which only three deaths due to mesothelioma were noted in 31,652 deaths of patients between 30 and 89 years of age. In an autopsy series of 2,500 deaths, asbestosis was found in 26. There were four mesotheliomas of the pleura, three mesotheliomas of the peritoneum, and seven bronchogenic carcinomas recorded in the patients with asbestosis. No mesotheliomas were found in the absence of asbestosis. Cases of diagnosed mesothelioma from the files of the Armed Forces Institute of Pathology were reviewed and in all cases where lung tissue was available it was examined for asbestos fibers. Asbestos fibers were found in five of the 19 pleural mesotheliomas and in 17 of the 26 peritoneal mesotheliomas. This is probably an underestimate of the true incidence of asbestosis among cases of mesothelioma in the United States since very little lung tissue was available for review and only asbestos bodies and not asbestos fibers were looked for. Mesothelioma should be added to the neoplastic risks of exposure to asbestos along with cancer of the lung (53 of 307 deaths) and probably cancer of the stomach (34 of 307 deaths).

-- J. Occ. Med. Absts.

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ABSTRACT NUMBER	DATE			FILE NUMBER
			NFC	752

AUTHOR: H. B. Eisenstadt

TITLE: Benign Asbestos Pleurisy

ORIG. REFS.	VOL.	PP	DATE	ABSTR. REFS.	VOL.	PP.	DATE
J. Am. Med. Assn.	192	419-421	May 3, 1965				

ABSTRACT: Reprint requests to 2301 Procter St., Port Arthur, Texas. (Dr. Eisenstadt)

Benign Asbestos Pleurisy. H. B. Eisenstadt. J. Am. Med. Assn. 192, 419-421 (May 3, 1965).

The clinical picture of benign asbestos pleurisy differs greatly from that of classical asbestosis. It may occur in the absence of significant pulmonary disease and respiratory dysfunction. This entity must be considered in the differential diagnosis of any form of idiopathic pleurisy. The history of exposure to asbestos will aid in directing the attention to this entity; however, the final diagnosis depends on a lung tissue specimen containing asbestos corpuscles or asbestos fibers. -- Author's summary

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AUTHOR: D. Cauna, R.S. Totten and P. Gross

TITLE: Asbestos Bodies in Human Lungs at Autopsy

JOUR. REF'S:	VOL.	PP.	DATE	ABSTR. REF'S:	VOL.	PP.	DATE
J. Am. Med. Assn.	192	371-373	May 3, 1965				

ABSTRACT:

Asbestos Bodies in Human Lungs at Autopsy. D. Cauna, R.S. Totten, and P. Gross. J. Am. Med. Assn. 192, 371-373 (May 3, 1965). Reprints Available from Industrial Hygiene Foundation Upon Request.

The incidence of asbestos bodies in the lungs was investigated in 100 autopsies of adults. Lung smears were taken from the sectioned surfaces of the upper and lower lobes of both lungs. The slides were dried and mounted without staining, and approximately 400 low-power fields were examined in each slide. Routine histological sections of unexpanded lungs were also examined in all cases. Asbestos bodies were found in 41% of the subjects. They were not encountered in persons up to 24 years of age. Among males the incidence was 47%, and in females 11%. Although significant microscopic pulmonary fibrosis was encountered in two positive cases, no instance of classical asbestosis was found. Mesothelioma of the pleura was not encountered. Primary lung carcinoma occurred in one patient with asbestos bodies and in one without. -- Authors' abst.

CON D:

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NUMBER			NFC	752
4/66				

AUTHOR: F. M. Kogan, A. A. Gerasimenko, and G. I. Bunimovich.

TITLE: Certain Immunobiological Shifts in Asbestosis.

ORIG. REFR.	VOL.	PP.	DATE	ABSTR. REFR.	VOL.	PP.	DATE
Gigiena i Sanit.	30	34-40	May '65	APCA Absts.	1	6	Jan. '66
Russian							

ABSTRACT:

Long-term inhalation of asbestos dust brought about a fall of the immunobiological reactivity of the body and, probably, its allergic responses. There was a most distinct inhibition of the complement titer. The changes of the complement titer preceded the onset of clinical and x-ray symptoms of pneumoconiosis. The study of the immunobiological reactivity of persons sick with asbestosis, caused by the inhalation of chrysotile-asbestos and anthophyllite-asbestos showed that in the first case the reactivity was inhibited to a greater extent. This was noted in the clinical course of asbestosis as well. Persons sick with asbestosis and those working under conditions of high dust content of the air presented lesions peculiar to auto-immunologic disease: rise in the alpha-globulin content and anti-complement activity of the serum.

-- APCA Absts.

MELLON INSTITUTE, PITTSBURGH, PA.

ABSTRACT NUMBER	DATE		FC	FILE NUMBER 753

AUTHOR: International Union Against Cancer

TITLE: Asbestos and Cancer. The Report and Recommendations of a Working Group Convened Under the Auspices of the Geographical Pathology Committee of the International Union Against Cancer.

ORIG. REFR.	VOL.	PP.	DATE	ABSTRACTS	VOL.	PP.	DATE
Can Med Assn J	92	1020-1025	May 8, 1965				

ABSTRACT:

Asbestos and Cancer. The Report and Recommendations of a Working Group Convened under the Auspices of the Geographical Pathology Committee of the International Union Against Cancer. Can. Med. Assn. J. 92, 1020-1025 (May 8, 1965).

This report is not suitable for abstracting, however the Editor of the Canadian Medical Association Journal summarizes the purpose and work of this international meeting as follows: "In October 1964, the New York Academy of Sciences sponsored an international meeting on the biological effects of asbestos. Following this meeting, some 40 delegates from Australia, Canada, Finland, France, Germany, Great Britain and Ireland, Italy, South Africa and the United States were invited to study the vast amount of information which had been presented with a view to the organization of an international study of asbestos and cancer. The terms of reference of this Working Group covered three major aspects of the problem: epidemiology, pathology and experimental pathology, and physics and chemistry. The findings of the Working Group and their recommendations arising from these studies are recorded, in slightly abridged form." -- Cond. from Editor's summary

ABSTRACT NUMBER	DATE			FILE NUMBER
	4/66		NFC	752

AUTHOR: J. M. G. Davis.

TITLE: Electron Microscope Studies of Asbestos in Man and Animals.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Med. lavoro	56	521-529	June July 1965	APCA Absts.	11	6	Jan. '66

ABSTRACT:

In both guinea pig and human lung material the formation of asbestos bodies has been shown to be an intracellular process. The first sign of asbestos body formation is the accumulation of dense granules approximately 60 Å in diameter around the asbestos fiber. It is suggested that these granules represent ferritin material. Usually the asbestos body coating consists of a single dense layer of ferritin, but often a whole series of layers of varying density is present. The outermost zone of these bodies often consists of an irregular layer of radially arranged fibrous material but occasionally the whole body coat consists of these fibers which have a diameter of 50-60 Å. From the evidence of this study it would appear that the well known segmentation of asbestos bodies can be of two types. In one the segmented appearance is due to the deposition of the body coating in separate globules, and in the other it is due to the splitting of a previously smooth coat. -- APCA Absts.

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ABSTRACT NUMBER	DATE			FILE NUMBER
	9/66	556	NFC	752

AUTHOR: K. F. W. Hinson.

TITLE: Cancer of the Lungs and Other Diseases After Exposure to Asbestos Dust.

ORIG. RECD.	VOL.	PP.	DATE	ABSTR. REPD.	VOL.	PP.	DATE
Brit. J. Diseases Chest	59	121-129	July '65	APCA Absts.	12	6	June '66

ABSTRACT

That exposure to the fibers of asbestos may cause a disabling and fatal fibrosis of the lungs has been recognized for many years. That patients with an established fibrosis (asbestosis) have a high incidence of bronchial carcinoma is also known. During the last few years there has been an accumulation of evidence to suggest that certain pleural or peritoneal tumors may be associated with a slight, and therefore possibly unrecognized, exposure to these minerals. The world production of asbestos has been increasing rapidly since 1959 and its industrial uses are becoming more varied. Three varieties of asbestos are most often used industrially: chrysotile (white asbestos) crocidolite (blue asbestos), and amosite. In Great Britain, exposure to asbestos dust might be to any or all three of the above kinds of asbestos; on the North American Continent it would probably be to chrysotile because of the huge native deposits found in Canada. The author discusses briefly the pathogenesis of asbestos, but dwells much more on the possible relationship of asbestos exposure and pleural tumors and tumors of the peritoneum. He also reviews the literature concerning the probable association between asbestosis and carcinoma of the lungs. Mentioned are the findings of J.G. Thomson and his co-workers (Industrial Hygiene Digest, Abst. 663, July 1963) of the high incidence (26.4%) of asbestos bodies found in the lung fluid of 500 consecutive autopsy subjects in South Africa. One of the authors of the paper on those findings is said to consider that the incidence in Miami, Florida, would be even higher.

-- APCA Absts.

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ABSTRACT NUMBER	DATE		FILE NUMBER
11[illegible]	1114	NFC	753

AUTHOR: Geographical Pathology Committee of the International Union Against Cancer (UICC)

TITLE: Report and Recommendations of the Working Group on Asbestos and Cancer.

PUBLICATION	VOL.	PP.	DATE	ABSTR REFS.	VOL.	PP.	DATE
Brit. J. Ind. Med.	22	165-171	July '65				

ABSTRACT:

The Geographical Pathology Committee of the International Union Against Cancer (UICC) convened a Working Group on October 22 to 23, 1964 in New York to discuss evidence of an association between exposure to asbestos dust and cancer. Forty delegates from eight countries attended, and separate panels on epidemiology, pathology and experimental pathology, and physics and chemistry met and, at the final session, under the chairmanship of Dr. Harold Stewart (USA) prepared the Report and Recommendations published in the present article.

-- Preface to paper

ABSTRACT NUMBER	DATE			FILE NUMBER
	9/66	777	NFC.	752

AUTHOR H. L. Hardy.

TITLE Asbestos Related Disease.

ORIG. REF.	VOL.	PP.	DATE	ABBRV. REF.	VOL.	PP.	DATE
Am. J. Med. Sci.	250	381-389	Oct. '65	APCA Absts.	12	6	June '66

ABSTRACT:

Four cases of asbestos related disease have been briefly described. Together with past and presently accumulating evidence, epidemiologic and experimental, these cases illustrate the potential hazard posed by asbestos exposure to both worker and neighbor. The purpose of this report is to interest clinicians in the harmful biologic effects of asbestos already documented. Evidence is impressive that asbestos exposure, often delayed in effect, will in the future be responsible for an important amount of pulmonary disease, especially chest tumors. In addition new evidence points to asbestos exposure as being significantly associated with abdominal tumors as well.

-- APCA Absts.

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1/66 | 11 | NFC | 752

MELLON INSTITUTE, PITTSBURGH, PA.

AUTHOR: Muriel L. Newhouse and Hilda Thomson.

TITLE: Mesothelioma of Pleura and Peritoneum Following exposure to Asbestos in the London Area.

ORIG. REF.	VOL.	PP.	DATE	ABSTR. REF.	VOL.	PP.	DATE
Brit. J. Ind. Med.	22	261-269	Oct. '65				

A series of 83 patients from the London Hospital with a diagnosis of mesothelioma confirmed by necropsy or biopsy has been studied for possible exposure to asbestos. The series consisted of 41 men and 42 women; 27 of the patients had peritoneal and 56 pleural tumors. The earliest death recorded was in 1917, but only ten of the series died before 1950 and 40 (48%) between 1960 and 1964. In 76 of the series full occupational and residential histories were obtained. Forty (52.6%) gave a history of occupational or domestic (living in the same house as an asbestos worker) exposure to asbestos compared with nine (11.8%) out of 76 patients from the same hospital suffering from other diseases ($P < 0.001$). None of the 17 suspected cases of mesothelioma, rejected on pathological grounds, was found to have had any exposure to asbestos. There was also evidence that neighborhood exposures may be important. Among those with no evidence of occupational or domestic exposures, 30.6% of the mesothelioma patients and 7.6% of the in-patients with other diseases lived within half a mile of an asbestos factory ($P < 0.01$). Out of the 31 patients with occupational exposures only ten were in jobs scheduled under the Asbestos Regulations of 1931. The interval between the first exposure and the development of the terminal illness of mesothelioma ranged between 16 and 55 years. In 47 patients in the mesothelioma series, lung tissue or sputum was available for examination. In 30 (62.5%) either asbestosis or asbestos bodies were present. -- Auth. abst.

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CLASSIFIED SUBJECT: 4/66

FELLOWSHIP NUMBER:

FILE NUMBER: 752

AUTHOR: New York Academy of Sciences.

AUTHOR'S POSITION AND ADDRESS:

TITLE: Biological Effects of Asbestos. Available from: N. Y. Acad. of Sci., 2 East Sixty-third St., N. Y., N. Y. 10021

PUB. DESIGNATION AND SERIAL NO.:

PLACE PUBLISHED AND PUBLISHER:

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REFERENCES:	MAPS:	POPULAR:	EXPERIMENTAL:	PROPAGANDA:	FAIR:
CONCLUSIONS:	COST DATA:	ENGINEERING:	STATISTICAL:		USELESS FOR PURPOSE:
TABLES:	INDEX: AUTH.: SUBJ.:	ORIGINAL AVAILABLE AT:			CALL NO.:

ABSTRACT:

This series of papers is the result of a conference held by the New York Academy of Sciences on the same subject (October 19-21, 1964), covering the following general areas: Asbestos Materials in Modern Technology; Lung Tissue and Mineral Matter: Problems of Pathogenesis; Human Exposure to Asbestos: Industrial Populations, Community Studies, Dust Controls and Standards: Clinical Studies of Pulmonary Asbestosis; Asbestos and Neoplasia: Experimental, Epidemiology, and Diffuse Mesothelial Tumors; and Problems and Perspectives. Appendix 1 presents the findings of the working group on Asbestos and Cancer, under the general headings of Epidemiology, Pathology, Physics and Chemistry. It is recommended that the relationship of different types of asbestos and tumorogenesis be studied in exposed populations on an international basis; that the importance of dosage (concentration and duration of exposure) be evaluated; and that the question of progression following removal from exposure be studied with

DATE EXAMINED: BY: PURPOSE OF SEARCH:

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full consideration of cancer mortality as well as morbidity from asbestosis in populations no longer exposed to the dust. Conversely, all cases of diffuse mesothelial tumors of pleura and peritoneum should be investigated by standardized pathological techniques for presence of asbestos to establish any association with asbestos or other factors. Criteria for pathological diagnosis are discussed. Hyaluronidase is mentioned as being often present in mesothelial tumors and where present is a valuable diagnostic aid, but as it is not invariably found in histochemical and chemical tests in the presence of mesothelioma, it should not be the sole diagnostic criterion. Other diagnostic pitfalls, such as encountered in use of exfoliative cytology and tissue culture are also mentioned. Need for more precisely planned experimental studies is emphasized and recommendation is made for creation of pathology reference panels to help establish standards for pathological classification. Appendix 2 reviews in detail the status of compensation for dust diseases of the lungs under State Workmens Compensation laws. The cost of dust diseases is heavy when compared to the cost of all occupational disease, but not in comparison to the total for all accidental injuries and occupational diseases combined. Correction of certain inequities in payment of medical benefits and compensation of workers with occupational diseases is recommended. Appendix 3 presents in tabular form statistics on asbestos production, updating data in the U.S. Bureau of Mines Information Circular of 1959 to 1962 and data on other countries up to 1963 is present.

9/66	789	NFC	752

AUTHOR: G. Nagelschmidt.

TITLE: Some Observations of the Dust Content and Composition in Lungs With Asbestosis, Made During Work on Coal Miner's Pneumoconiosis.

PUB. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Ann. N. Y. Acad. Sci.	132	64-76	Dec. 31, 1965	APCA Abstr.	12	7	June '66

ABSTRACT:

In the conclusion of this paper it is said that the most interesting result of this study of lung tissue from asbestosis sufferers, was that in over half the lung tissue samples from Great Britain and South Africa practically no asbestos at all was found irrespective of the grade of fibrosis. It is unlikely that this was due to faulty technique although further study of the technique of recovery of asbestos, especially of chrysotile, from lungs is undoubtedly required. It is likely that this effect—the disappearance of asbestos from the lungs—is real and needs to be explained. The most likely explanation is that asbestos does get dissolved in the lungs. The process of dissolution is likely to start with a removal of the cations, magnesium, sodium, iron, and aluminum, which would leave a skeleton of hydrated silica or polysilicic acid. On physiochemical and structural reasoning one would expect chrysotile to be most easily attacked, crocidolite to be intermediate, and amosite to be the most resistant form. The finding of amosite only in some of the lung residues would be in agreement with such reasoning. The most prevalent type of fibrosis seen in asbestos is a diffuse interstitial fibrosis, in contrast to focal or nodular lesions

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found initially in most other forms of pneumoconiosis. At a later stage massive lesions may develop. A theory linking this contrast with lung dust studies has been advanced (Nagelschmidt, 1960). According to this theory the dust remaining in the lungs causes the fibrosis in coal workers and similar forms of pneumoconiosis, and a positive correlation between amount of dust and severity of fibrosis or x-ray category of simple pneumoconiosis is found. The amounts of dust in the lungs are large and may average 50gm. for advanced stages of coal workers pneumoconiosis. In diffuse interstitial fibrosis, as seen mainly in aluminosis and asbestosis, this does not seem to be the case; the amounts of asbestos found in the lung are very small and are not clearly related to grade of fibrosis; dissolution of the dust is the most likely explanation. Similar views with regard to the action of chrysotile have already been expressed. Further research is obviously required before the mechanism by which asbestosis is produced can be said to be known.

-- APCA Abstr.

ABSTRACT NUMBER	DATE			FILE NUMBER
[illegible]	10/66		NFC	752

AUTHOR: J. C. Wagner.

TITLE: The Sequelae of Exposure to Asbestos Dust.

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Ann. N. Y. Acad. Sci.	132	691-695	Dec. 31, 1965	APCA Absts.	12	2	July'66

ABSTRACT:

The sequelae of exposure to asbestos dust, include its inhalation, deposition, and the results of subsequent retention. The actual type of asbestos dust to which an individual is exposed depends upon the environment in which he works or lives and his occupation. It is necessary to know the mineralogical variety of asbestos and its contaminants, whether they come from the mines, mills, method of transport, or additives used in industry. The preliminary results of several experiments in which tumors have been obtained in experimental animals have been presented. In these studies a variety of dusts were inoculated into animals of several species. The yield of tumors is high but the dose of intrapleural dust is very large compared with the amount present in man. Experiments show that standard dusts from the different types of asbestos are required to establish a base line. This applies to dusts from all animal experiments, chemical analyses, and other investigations. -- APCA Absts.

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ABSTRACT NUMBER	DATE			FILE NUMBER
	9/66	681	NFC	752

AUTHOR: P. E. Holt, J. Mills, and D. K. Young

TITLE: Experimental Asbestosis With Four Types of Fibers. Importance of Small Particles.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Ann. N. Y. Acad. Sci	182	87-97	Dec. 31, 1	965 APCA Abstr.	12	6	June'66

ABSTRACT:

The guinea pig lung reacts immediately to inhalation of asbestos dust. There is a bronchiolitis with extension of the inflammatory reaction to the adjacent alveoli. At a later stage there is a widespread and progressive fibrosis of the lung, adenoid proliferation of the bronchiolar epithelium, and reticulinosis and fibrosis of the tracheal lymph glands. The inhaled dust early becomes coated with an iron-containing protein to form asbestos bodies. These have been recognized within seven days of exposure to the dust. Fine dust particles, too small to be seen under the light microscope, will produce asbestosis in the guinea pig. The difficulty of controlling the spread of dust has been demonstrated. -- APCA Abstr.

ABSTRACT NUMBER	DATE			FILE NUMBER
	10/66		N FC	752

AUTHOR I. J. Selikoff.

TITLE The Occurrence of Pleural Calcification Among Asbestos Insulation Workers

ORIG. REF'S.	VOL	PP	DATE	ABSTR. REF'S.	VOL.	PP.	DATE
nn. N. Y. Acad. Sci.	13	351-367	Dec. 1965	APCA Absts.	12	6	July'66

ABSTRACT

Roentgenographic study of 1,117 asbestos insulation workers showed pleural calcification to be a common finding, and 150 instances of such calcification were present. Data are presented which demonstrates that pleural calcification among workers exposed to asbestos in this trade rarely occurs in less than 20 years from onset to exposure. Pleural calcification was found in five of 725 asbestos insulation workers with less than 20 years from beginning work with asbestos. The pleural calcification is primarily found in the parietal pleura, more heavily, in the lower portions of the chest. Data concerning correlations with pleural fibrosis and asbestotic parenchemal fibrosis are given. Pleural calcification not infrequently is present in the absence of radiologically visible parenchymal fibrosis. The finding of calcification as described generally indicates asbestos exposure more than 20 years. -- APCA Absts.

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9/66 | 440 | NFC | 752

AUTHOR: J. C. Wagner and J. W. Skidmore.

TITLE: Asbestos Dust Deposition and Retention in Rats.

ORIG. REFR.	VOL.	PP.	DATE	ABSTR. REFR.	VOL.	PP.	DATE
Ann. N. Y. Acad. Sci.	132	77-86	Dec. 31 1965	APCA Absts.	12	8	June '66

ABSTRACT:

A method of producing asbestos dust clouds has been devised and an animal inhalation experiment carried out to test it. Observations on the histological distribution of the dusts in the lungs of the rats have shown that the dusts tend to accumulate in the alveoli arising directly from the respiratory bronchioles. The weights of the asbestos dusts found in the lungs of the rats at the end of exposure were found to differ considerably, but the subsequently determined elimination rates indicated that the weights of dust deposited were in a constant ratio with the weights of dust collected by the size-selective sampler. To deposit an equal amount of a nonfibrous dust, allowance must be made for the reduced efficiency of the upper respiratory tract in preventing the penetration of the compact dust particles to the alveolar regions. The elimination rate of Rhodesian chrysotile has been found to be three times greater than that of amosite and crocidolite, which suggests an explanation for the previously observed reduced fibrogenicity of this dust. The reason for the difference in the elimination rate remains to be determined. -- APCA Absts.

ABSTRACT NUMBER	DATE			FILE NUMBER
1	7/66		NFC	752

AUTHOR. V. Timbrell.

TITLE. The Inhalation of Fibrous Dusts.

ORIG. REFR.	VOL.	PP	DATE	ABSTR REFR.	VOL.	PP.	DATE
Ann. N. Y. Acad. Sci.	132	255-27	3 Dec. 31 1965	APCA Absts.	11	4	Apr. '66

ABSTRACT:

The largest compact particles normally found in lungs are about 10 microns in diameter. Asbestos fibers 50 microns and even 200 microns long can be explained by the fact that the parameter of the two main deposition mechanisms is particle free-falling speed, determined by the diameter and not the length. If the diameter of an asbestos fiber is less than 3.5 microns, the fiber has a chance of escaping deposition by these two mechanisms and of penetrating deeply into the lung. The more symmetrical a fiber is, the greater its chance of penetrating. The limitation on the lengths of the fibers which reach the pulmonary air spaces is imposed by the nasal hairs and by the small diameters of the respiratory bronchioles. Asbestos and glass fibers are discussed.
-- APCA Absts.

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ABSTRACT NUMBER	DATE			FILE NUMBER
	7/66		NFC	752

AUTHOR J. G. Thomson

TITLE Asbestos and the Urban Dweller.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Ann. N. Y. Acad. Sci.	132	196-21	Dec. 31 1965	APCA Absts.	11	5	Apr. '66

ABSTRACT

Investigations were made in Cape Town, South Africa, to determine the extent to which the ordinary urban dweller is exposed by occupation or environment to the inhalation of asbestos. Investigations were made by counting asbestos bodies in smears from the lung bases from 500 consecutive autopsies in subjects over 15 years of age in Cape Town and 500 in Miami, Florida. The results were similar in the two cities. Approximately 30% of the males and 20% of the females showed asbestos bodies. The finding of abundant asbestos bodies in the lung bases of one in 17 of the male hospital population suggests that the occupational hazard from asbestos is greater and more diversified than realized at present. As a limited basal asbestosis may be associated with malignant mesothelioma of pleura and peritoneum an increase in this tumor is forecast as the main ground for regarding asbestos as a potential urban hazard. -- APCA Absts.

SELIKOFF INSTITUTE, PITTSBURGH, PA.

ABSTRACT NUMBER	DATE			FILE NUMBER
	11/66	107	NFC	752

AUTHOR: S. A. Roach.

TITLE: Measurement of Airborne Asbestos Dust by Instruments Measuring Different Parameters.

PERIO. REF'D.	VOL.	PP.	DATE	ABSTR. REF'D.	VOL.	PP.	DATE
Ann. N. Y. Acad. Sc.	132	306-31	5 Dec. 1965	APCA Absts.	12	4	Aug. '66

ABSTRACT:

The size and shape of the airborne dust was measured in five samples taken with a Casella thermal precipitator. These samples were examined with a light field microscope using a 2 mm. oil immersion objective having a numercial aperture of 1.30. The results of fiber and particle counts are discussed. The counts obtained varied with the sampling instrument and particular microscope assembly used. Results obtained by four sampling instruments are shown in table 5. The work described in this report was undertaken to determine a suitable method of measuring the dust exposure of many workers for some years in studies of the effects of inhaling asbestos dust.

-- APCA Absts.

MELLON INSTITUTE, PITTSBURGH, PA.

ABSTRACT NUMBER	DATE			FILE NUMBER
	9/66	SSF	NFC	752

AUTHOR: J.S. Harrington.

TITLE: Chemical Studies of Asbestos.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Ann. N.Y. Acad. Sci.	132	31-47	Dec. 31, 1965	APCA Absts.	12	3	June'66

ABSTRACT:

Further chemical studies of the three main types of asbestos, crocidolite, amosite, and chrysotile have been made. The origin of the primary oils associated with crocidolite and amosite has been discussed. By suitable methods 0.32% of extractable material can be removed from crocidolite and 0.25% from amosite. A sample of commercial amosite known to be carcinogenic yielded 0.76% of extractable material. Chemical investigations have been made of the oils from crocidolite and amosite by various techniques. Low levels of polycyclic aromatic hydrocarbons were detected. In addition to the primary oils, asbestos may contain secondary oils derived from contamination or from the intentional application of oil during processing in industry. Up to 80% of the jute oil in the jute bags used for storing asbestos may be absorbed by the asbestos fiber. This could explain why chrysotile, which apparently has no primary oils, may contain, after milling and other industrial treatment, yields of from 0.1 to 0.4%. Insulation materials also contain significant amounts of extractable material. Finally, studies have been made to assess wherever possible, the part which metals and metal complexes may play in the carcinogenic action. --APCA Absts.

MELLON INSTITUTE, PITTSBURGH, PA.

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10766 | | NFC | 752

AUTHOR L. Miller, W. E. Smith and S. W. Berliner

TITLE Tests for Effect of Asbestos on Benzo(a) Pyrene, Carcinogenesis in the Respiratory Tract.

ORIG. REF.	VOL.	PP.	DATE	ABSTR. REF.	VOL.	PP.	DATE
Ann. N. Y. Acad. Sci.	132	482-500	Dec. 1965	APCA Abstr.	12	6	July, '66

ABSTRACT

Time of appearance and yields of papillomas and carcinomas in the respiratory tract of hamsters after intratracheal injections of benzo(a) pyrene are reported. Addition of chrysotile variety of asbestos in the injections gave results consistent with an hypothesis that this material promoted benzo(a) pyrene carcinogenesis in the respiratory tract. Addition of the amosite variety of asbestos to injections of benzo(a) pyrene did not increase the yield of tumors found in the respiratory tract. Two experiments were carried out. All lesions recognized as tumors in gross specimens by examination at 7X with a dissecting microscope proved to be papillomas or carcinomas when studied in histological sections. Tabulation of tumors in the present report is restricted to those that were detected by examination of gross specimens and then confirmed in histological sections. -- APCA Abstr.

MELLON INSTITUTE, PITTSBURGH, PA.

ABSTRACT NUMBER	DATE			FILE NUMBER
	8/66	778	NFC	752

AUTHOR: P. R. Peacock and A. Peacock.

TITLE: Asbestos Induced Tumors in White Leghorn Fowls.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Ann. N. Y. Acad. Sc	132	501-503	Dec. 1965	APCA Absts.	11	7	May 66

ABSTRACT:

The anatomy of birds differs from that of mammals in that there are multiple air sacs in direct communication with the lungs, with a system of primary and recurrent bronchi. Physiologically the respiratory cycle consists of inspiration through the primary bronchi directly into the air sacs followed by forcible expiration when the air sacs return the air through the recurrent bronchi which lead to the pulmonary alveoli where the exchange takes place. The reaction of the mesothelial and pulmonary epithelial tissues of fowls to asbestos was investigated. The technique has proved satisfactory for this type of study. -- APCA Absts. modified

MELLON INSTITUTE, PITTSBURGH, PA.

ABSTRACT NUMBER	DATE			FILE NUMBER
	8/66	789	NFC	752

AUTHOR: E. C. Hammond, I. J. Selikoff, and J. Churg.

TITLE: Neoplasia Among Insulation Workers in the United States With Special Reference to Intra-Abdominal Neoplasia.

ORIG. REF'S.	VOL.	PP.	DATE	ABSTR. REF'S.	VOL.	PP.	DATE
Ann. N. Y. Acad. Sc.	132	519-52	25 Dec. 1965	APCA ABSTS.	11	6	May'66

ABSTRACT:

Malignant neoplasms produced by exposure to chemical agents or ionizing radiation typically have a long latent period and there is a long delay between first exposure and the appearance of the neoplasm. The probability that neoplasia will occur and how soon it appears generally depends upon the degree of exposure. The early reports apparently concerned workers who were heavily exposed to asbestos dust. Pulmonary diseases including tuberculosis and pneumonia were among the leading causes of death. -- APCA Absts.

MELLON INSTITUTE, PITTSBURGH, PA.

ABSTRACT NUMBER	DATE			FILE NUMBER
	2/67	12	NFC	752

AUTHOR: B. Pernis, et al.

TITLE: Rheumatoid Factor in Serum of Individuals Exposed to Asbestos.

ORIG. REFR.	VOL.	PP.	DATE	ABSTR. REFR.	VOL.	PP.	DATE
Ann. N.Y. Acad. Sci.		132 112-120	Dec. 31, '65	APCA Absts.	12	7	Oct. '66

ABSTRACT:

The presence and titer of rheumatoid factors in the sera of 315 asbestos insulation workers and of 103 controls were determined by conditioned hemagglutination with tanned red cells coated with aggregated human or rabbit gamma globulins. The asbestos workers were exposed to the dust for periods from 1 to 54 years, and most of them showed x-ray evidence of asbestosis that was graded into grades from one to three. A definite increase in frequency and titers of rheumatoid factors in the controls of same age and sex, was found in workers with asbestosis of grades in two and three. Similar serological abnormalities are found in cases of pulmonary fibrosis of different origin, idiopathic, silicosis, coal workers' pneumoconiosis, and sarcoidosis.

-- APCA Absts.

MELLON INSTITUTE, PITTSBURGH, PA.

ABSTRACT NUMBER	DATE			FILE NUMBER
	1/67		NFC	752

AUTHOR: A. David.

TITLE: A Simple Method for Detection of Asbestos Bodies in Sputum.

ORIG. REPT.	VOL.	PP.	DATE	ABSTR. REPT.	VOL.	PP.	DATE
Pracovni Lekar	17	244-245	1965	APCA Absts.	12	4	Sept. '66

ABSTRACT

The author describes a simplified method, according to Champeix and Faur, for estimating asbestos particles in sputum. To the sputum collected in the course of 24 hours, 4% NaOH is added, the mixture is centrifuged and from the sediment smears are made in which asbestos particles are sought either directly or under cedar oil immersion. Even when the expectoration of bronchial secretion is small, asbestos particles are regularly detected in subjects exposed to asbestos dust a number of years ago. -- APCA Absts.

MELLON INSTITUTE, PITTSBURGH, PA.

ABSTRACT NUMBER	DATE			FILE NUMBER
	2/67		NFC	752

AUTHOR: Anonymous

TITLE: Exposure to Asbestos and Malignancy

ORIG. REFR.	VOL.	PP	DATE	ABSTR REFR.	VOL.	PP.	DATE
London Clin. Med.	7	10-11	Jan '66	APCA Absts.	12	7	Oct '66

ABSTRACT

Recent surveys have shown asbestos bodies to be present in many of the otherwise normal lungs of those living in clean, non-industrial communities, suggesting that environmental contamination with asbestos dust is widespread. Perhaps this is not altogether surprising considering the variety of domestic asbestos products that exist and their wide use in modern building. Present evidence suggests that there is a wide spectrum of pathological changes resulting from asbestos inhalation. Prominence was given recently to the relationship between asbestos exposure and mesothelioma. Possible widespread community contamination by asbestos clearly calls for a full assessment of its carcinogenic properties. Both crysotile and crocidolite have been associated with bronchial carcinoma and mesothelioma, but amosite has not. It follows that both qualitative and quantitative analyses of asbestos in tissues could be most helpful in the further elucidation of this problem. In addition the relationship between asbestos exposure, smoking, and neoplasia formation, requires analysis. -- APCA Absts.

MELLON INSTITUTE, PITTSBURGH, PA.

ABSTRACT NUMBER	DATE			FILE NUMBER
	11/66	1954	NFC	752

AUTHOR Anon

TITLE Health Hazards of Asbestos.

ORIG. REF.	VOL.	PP.	DATE	ABSTR. REF.	VOL.	PP.	DATE
Lancet	1	530-53	Mar. 5 1966	Pub. Hlth. Eng. Abstr.	46	259	Aug. '66

ABSTRACT:

Health Hazards of Asbestos. Anonymous. Lancet 1, 530-531 (March 5, 1966).

The effects of exposure to asbestos and preventive measures taken by industry to eliminate all heavy or unnecessary exposure are outlined. There are 35 references.

-- Public Health Eng. Abstr.

ABSTRACT NUMBER	DATE			FILE NUMBER
	11/66	1053	NFC	752

AUTHOR: D. Hourihane, et al.

TITLE: Hyaline and Calrified Pleural Plaques As an Index of Exposure to Asbestos. (A Study of Radiological and Pathological Features of 100 Cases with a Consideration of Epidemiology).

PUBLICATION		DATE	ABSTR REFD.	VOL.	PP.	DATE
Brit. Med. J.	1	1069-1074 Apr. 1966	30, APCA Absts.	12	5	Aug. '66

ABSTRACT:

A close association between exposure to asbestos and the development of pleural plaques has been shown. A cause-and-effect relationship is probable. The most extensive lesions are radiologically detectable, and the disease asbestosis is then also present, despite the absence of any other radiological abnormality. The sources of asbestos are considered and evidence is presented to suggest that there is a widespread non-industrial community exposure. Mesotheliomata are common in patients with pleural plaques, and it is suggested that there is a dose-response relationship between the asbestos and the development of these neoplasms. The question of the relationship between lung cancer and asbestos is left open, but the value of radiological surveys for pleural plaques is emphasized in any study of this problem. Asbestos is not the sole cause of pleural plaques, but it is certainly the most common. -- APCA Absts.

EDITOR'S NOTE: Regarding pleural plaques and asbestos exposure also see abstract No. 1036 this issue.

MELLON INSTITUTE, PITTSBURGH, PA.

AUTHOR: C. G. Addingley.

TITLE: Asbestos Dust and its [redacted]easurement.

ORIG. REF'S	VOL.	PP.	DATE	ABSTR. REF'S	VOL.	PP.	DATE
Ann. Occ. Hyg. (London)	9	73-82	Apr. '66	APCA Absts.	12	1	Dec. '66

ABSTRACT:

The nature of asbestos dust and the testing requirements are discussed. Existing standard methods are briefly reviewed. The development of a membrane filter method of dust counting for asbestos is described in detail. It is thought to be an improvement on existing methods. Tyndallometric methods are considered, and a description of the application of the "Royco" Particle Counter, an instrument based on this principle, to factory testing is described. It is believed that this instrument represents a big advance in routine test methods. -- APCA Absts.

Mellon Institute, Pittsburgh, Pa.

ABSTRACT NUMBER	DATE		FILE NUMBER
	4/66	FC	752

AUTHOR: A. Laamanen, L. Noro, and V. Raino.

TITLE: Observations on Pollution Caused by Asbestos.

ORIG. REF'S.	VOL.	PP.	DATE	ANSTR. REF'S.	VOL.	PP.	DATE

ABSTRACT:

The quarrying of asbestos in Finland has a tradition of approximately 50 years. The production is nowadays about 15,000 tons of antophyllite asbestos. In his work on non-occupational endemic asbestosis, published in 1960, Dr. R. Kiviluoto mentioned that in approximately 500 persons living around the quarries calcifications of pleura were found in x-ray examinations. Dr. V. Raunio, who at present is studying further the incidence of pleural calcifications among the population around the quarries, has mentioned that 1300 additional cases have been found. Dr. Kiviluoto, however, estimates that approximately ten per cent of the population living around the quarries might have pleural plaques. At the request of Dr. V. Raunio and the Finnish asbestos company, Suomen Mineraali, the Institute of Occupational Health has performed some air pollution studies around quarries, trying especially to find out the presence of asbestos in the air. In the following there are some preliminary observations. The first survey was made between August 20—November 28, 1961, and

samples were taken at 13 points around the quarries. A second survey was made between June 25—November 25, 1963. The results of these surveys are presented and are available upon request.

MELLON INSTITUTE, PITTSBURGH, PA.

5/66 | 477 | NFC | 752

AUTHOR: R. H. Mann, J. L. Gross, and W. M. O'Donnell

TITLE: Mesothelioma Associated With Abestosis. A Report of Three Cases.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Cancer	19	521-526	Apr. '66				

ABSTRACT:

A study of 54 autopsies of patients dying with pulmonary asbestosis disclosed three cases of peritoneal mesothelioma, one of which was complicated by a mesothelioma of the pleura. In two of the three patients there was an occupational exposure history of 20 and 34 years in an asbestos textile plant. Although the remaining patient had classical asbestosis of the lungs at autopsy, there was no known history of industrial exposure to asbestos. The authors think asbestos can produce mesothelioma of either peritoneum or pleura; they present three cases to support the concept of a causal relationship. The increased utilization of asbestos material and the recent demonstration of asbestos bodies in the lungs of urban dwellers may have significant implications for cancer epidemiology in the future. -- Authors' abst.

MELLON INSTITUTE, PITTSBURGH, PA.

MELLON INSTITUTE, PITTSBURGH, PA.

8/66 | NFC | 752

AUTHOR: J.G. Thomson and [redacted] M. Graves, Jr.

TITLE: Asbestos as an Urban Air Contaminant.

ORIG. REF'S.	VOL	PP	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Arch. Pathol.	81	158-16[illegible]	May'66				

ABSTRACT:

Asbestos bodies were demonstrated in smears from the lung bases in 20% of the females and 30% of the males of 500 consecutive autopsies in subjects of 15 years or over in Miami, Florida. In the great majority of these cases, including all the females, the asbestos bodies were scanty, were not associated with any pulmonary changes, and were regarded as the result of contamination of the urban atmosphere by asbestos. In 6% of all males examined the asbestos bodies were numerous and were presumably of occupational origin. It is suggested that both urban air contamination and industrial exposure to asbestos are likely to increase in the future, in view of the increasing consumption and diversity of uses of asbestos and asbestos-containing products and of its virtual indestructibility. An increase in the frequency of malignant mesothelioma of pleura and peritoneum is forecast rather than pulmonary disease or disability. -- Authors' summary

Editor's Note: Dr. Gross, Director of the Foundation's Research Laboratory, has submitted a letter to the editor disagreeing with several of this article's assumptions and conclusions. The authors state: "The suspicion that asbestos fibers are now a hazard of urban living is confirmed more amply than expected" and, in another place, "There are statements in the literature on asbestos mainly by people other than pathologists that the asbestos body is nonspecific. These opinions are not held by histopathologists today." An editorial in the same issue, entitled "Progressive Metamorphosis," encourages letters to the editor, suggesting that "The airing of some controversial subject in a communication may on occasion prove of even more value than the original." Digest readers should, therefore, be alert to the existence and availability of opposing opinions on several important areas covered. -- RTP deT

ABSTRACT NUMBER	DATE			FILE NUMBER
	9/66		FC	752

AUTHOR J. V. Crable.

TITLE Quantitative Determination of Chrysotile, Amosite and Crocidolite by X-ray Diffraction.

PUBLICATION	VOL.	PP.	DATE	ABSTR. REPR.	VOL.	PP.	DATE
Am. Ind. Hyg. Assn. J.	27	293-298	May-June 1966				

ABSTRACT:

Quantitative Determination of Chrysotile, Amosite and Crocidolite by X-ray Diffraction.
J. V. Crable. Am. Ind. Hyg. Assn. J. 27, 293-298 (May-June, 1966).

The determination of asbestos by x-ray diffraction in environmental samples is described. Evenly distributed mats of asbestos samples on molecular membrane filters are prepared for x-ray diffraction examination. Each asbestos mineral has its characteristic x-ray diffraction pattern. A qualitative scan of a mounted filtered sample identifies the crystalline substances present including the asbestos minerals. A quantitative determination of a given type of asbestos is made by measuring the area under its major diffraction peak and comparing this area with that of a known quantity of an external standard. -- Author's abst.

MELLON INSTITUTE, PITTSBURGH, PA.

ABSTRACT NUMBER	DATE			FILE NUMBER
1005	10/66		NFC	752

AUTHOR. M. Kleinfeld, J. Messite, and J. Shapiro.

TITLE. Clinical, Radiological, and Physiological Findings in Asbestosis.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Arch. Internal. Med.	117	813-81	June	1966			

Clinical, electrocardiographic, and physiological observations were made of 21 asbestos workers who had an average exposure to asbestos dust of 29.2 years and who had radiological findings compatible with asbestosis. Ten of the 21 workers had chronic cough, and seven evidenced exertional dyspnea. Basilar crepitations were found in eight, and six had clubbing. Electrocardiographic findings were abnormal in six but in none of these were the abnormalities consistent with the criteria of cor pulmonale. In eight individuals, the pulmonary infiltration was minimal, in nine it was moderate, and in four it was classified as severe. Varying degree of obliteration of the costophrenic sinuses was observed in 16 or cardiac borders in ten. Pleural calcification was observed in five. Two individuals showed emphysema which was localized. The abnormal lung function findings were consistent with a restrictive breathing and diffusion capacity impairment. This was characterized by low values in vital capacity (14 persons), in total lung capacity in (eight), and in diffusion capacity (13). The workers with dyspnea and lung crepitations had a significantly lower mean vital capacity and total lung capacity than those without these clinical findings. In addition, the group with pulmonary crepitations had a lower mean diffusion capacity for carbon monoxide ($D_{L_{CO}}$). There was a poor correlation between clubbing and vital capacity, total lung capacity, and diffusion capacity. There was a weak correlation between these lung function parameters and the degree of pulmonary infiltration. When 16 of the 21 asbestos workers were compared with a group of 20 asbestos workers of similar age and duration of asbestos exposure, but having negative radiological findings, there were no significant differences in the clinical findings between the two groups. There was, however, a significantly lower vital capacity, total lung capacity, and diffusion capacity in the group with positive radiological signs as compared with the group with negative roentgenograms. There are ten references. -- Authors' summary

INSTITUTE, PITTSBURGH, PA.

MELLON INSTITUTE, PITTSBURGH, PA.

ABSTRACT NUMBER	DATE			FILE NUMBER
	9/67	826	FC	752

AUTHOR: J. C. Gilson

TITLE: Health Hazards of Asbestos. Recent Studies on its Biological Effects. Wyers Memorial Lecture, 1965.

ORIG. REF'S.	VOL.	PP.	DATE	ABSTR. REF'S.	VOL.	PP.	DATE
Trans. Soc. Occ. Med.	16	62-74	7/66				

ABSTRACT:

The author discusses the subject under the following headings: Types of fiber and production recent animal experimental work with asbestos; inhalation of fibers; experimental asbestosis; experimental carcinogenesis; health hazards of asbestos; asbestosis-present position in the U.K.; asbestos exposure and cancer; bronchial tumors; diffuse mesothelial tumors; and outstanding problems.

NUMBER			FILE NUMBER
11/66		NFC	752

AUTHOR J.V. Crable and Marta J. Knott.

TITLE Application of X-ray Diffraction to the Determination of Chrysotile in Bulk or Settled Dust Samples.

ORIG. REFR.	VOL.	PP	DATE	ABSTR. REFR.	VOL.	PP.	DATE
Am. Ind. Hyg. Assn. J.	27	383-387	July-Aug. 1966				

ABSTRACT

The pursuit of an environmental study of the asbestos industry has emphasized the need for determining quantitatively, on a mass basis, the asbestos fibers present in bulk or settled dust samples. The use of x-ray diffraction in the analysis of industrial dusts is a widely accepted procedure. In the present paper a quantitative procedure has been developed for analyzing bulk or settled dust samples for chrysotile, the asbestos fiber most widely used in the United States asbestos industry. This asbestos mineral is a hydrated magnesium silicate with a crystalline structure which provides a distinct x-ray diffraction pattern of sufficient intensity to be used in quantitative analyses. X-ray diffraction is utilized for qualitative and quantitative determinations of this type of asbestos. The qualitative method establishes the presence of fibers in the dust samples and indicates possible interferences. An internal standard, aquamarine, is used in the quantitative determination of the asbestos mineral. This method for chrysotile is not limited to environmental samples but can be applied to 1-g. samples of materials from other sources.

MELLON INSTITUTE, PITTSBURGH, PA.

ABSTRACT NUMBER	DATE			FILE NUMBER
	2/67	153	FC	752

AUTHOR: W. T. Keane and M. R. Zavon

TITLE: Occupational Hazards of Pipe Insulators.

ORIG. REFR.	VOL.	PP.	DATE	ABSTR. REFR.	VOL.	PP.	DATE
Arch. Environ.	13	171	Aug. '66				
Health		184					

ABSTRACT:

In this survey the attempt has been made to investigate all of the substances with which insulators come in contact in the normal pursuit of their trade. In the present state of technology, and in light of existing medical and toxicological data, the majority of the substances examined proved incapable of presenting a serious health hazard to insulators. The only insulating substance which justifies concern is asbestos. This report and other available scientific data at the present time are insufficient to provide an adequately based conclusion. The most convincing data are those of Selikoff. The further results of his and other investigations will be awaited and should contribute toward sound judgment of this matter. There are 155 references. -- Authors' summary

MELLON INSTITUTE, PITTSBURGH, PA.

MELLON INSTITUTE, PITTSBURGH, PA.

AUTHOR: W.M. O'Donnell, R.H. [illegible]ann, and J.L. Grosh.

TITLE: Asbestos, An Intrinsic Factor in the Pathogenesis of Bronchogenic Carcinoma and Mesothelioma.

ORIG. REFR.	VOL.	PP.	DATE	ABSTR. REFR.	VOL.	PP.	DATE
Cancer	19	1143-11	18 Aug. 1966				

ABSTRACT:

In 55 asbestos textile workers who had pathologically proven asbestosis, 28 malignant neoplasms were found—23 bronchogenic carcinomas and five mesotheliomas of peritoneum or pleura. Of the 28 patients with neoplasms, 26 had been exposed to asbestos dust before 1936; the medium total occupational exposure was 20 years. The interval from initial exposure until the recognition of the neoplasms varied from 20 to 40 years. Thirteen of the individuals no longer were employed in the industry when evidence of the neoplasms appeared. The primary anatomical site of the carcinomas was in the lower lobes of the lungs in 22 patients and in one instance was multicentric in origin. In the morphologic classifications of the neoplasms, ten were of the squamous cell variety; seven were anaplastic; five were adenocarcinoma and one was bronchiolar. The frequent association of pulmonary asbestosis with bronchogenic carcinoma (42%) and mesothelioma (8%), as seen in this study, lends further support to the opinion that asbestos is a carcinogen in susceptible individuals after critical exposure in the textile phase of the industry.-- Authors' abst.

CLASSIFIED SUBJECT | 6/68 | 554 | NEC | 752

AUTHOR: Gold, C., and Cuthbert, J.

TITLE: Asbestos--A Hazard to the Community.

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Public Hlth. (London)	80	261-70	Sept., 1966	APCA Abstr.	13	7 March, 1968	

During a recent study of pulmonary fibrosis in a Southeast Glasgow clinic, 21 proved cases and 3 possible cases of lung pathology associated with exposure to asbestos have come to light. A patient with suspected asbestosis should have, in addition to x-rays, an examination for asbestos bodies in the sputum, lung function tests, and open lung biopsy, since asbestosis has been proved in patients with normal or borderline x-rays by the lung function test and most reliably by lung biopsy. It is also important to take a complete occupational history in cases of obscure pulmonary fibrosis, since asbestosis or pleural tumors may occur many years after a short exposure to the asbestos dust. Also, persons in occupations usually not associated with health hazards may be endangered by working in close proximity with people who use asbestos, especially in confined spaces. Case histories are given and a table is presented showing the type of asbestosis, occupation, length of exposure, age, and period elapsed since exposure of the 24 patients studied. Since the use of asbestos has become more widespread in recent years, it is recommended that possible alternative materials to asbestos should be used whenever possible. A proposal to mix asbestos with tarmacadam for road use is viewed with concern. -- APCA Abstr.

Editor's Note: Regarding 554-566, interested readers are referred to the Editorial in the May issue of IHD and IHF Medical Series Bulletins No. 11 and 12 which report progress and planning of IHF asbestos bioeffects research. -- R. T. P. deT.

DATE EXAMINED: BY:

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FORM 77 NOV 4-44

ABSTRACT NUMBER	DATE		NFC	FILE NUMBER
	1	/ /	NFC	752

AUTHOR: F. Walter

TITLE: Evaluation and Assessment of the Dust Measurements in Asbestos Plants of the Textile Industry.

ORIG. REFR.	VOL.	PP.	DATE	ABSTR. REFR.	VOL.	PP.	DATE
Staub Reinhaltung der Luft (English Ed.)	26	6-19	Oct. 1966	Public Health Eng. Absts.	47	252	Aug. 1967

ABSTRACT:

The konimeter measurements in asbestos plants of the textile industry and their classification according to the microphotographic tests give an accurate picture of dust concentration. Gravimetric measurements give an average value; they can also be used for an assessment by coefficients. There is a limited relationship between the values measured by filtering instruments and those obtained by konimeter. This is particularly valid when the dust concentration lies below the danger limit. There are 4 references.

-- Author's abst., Public Health Eng. Absts.

MELLON INSTITUTE, PITTSBURGH, PA.

ABSTRACT NUMBER	DATE			FILE NUMBER
	1/67	7	NFC	752

AUTHOR: J.R. Lynch and H.E. Ayer.

TITLE: Measurement of Dust Exposure in the Asbestos Textile Industry.

PUBLICATION REFS.	VOL.	PP.	DATE	ABSTR REFS.	VOL.	PP.	DATE
Am. Ind. Hyg. Assn J.	27	431-43	Sept. Oct. '66				

ABSTRACT:

Data obtained from environmental surveys of nine asbestos textile mills, which represent the baseline for the textile segment of the Public Health Service epidemiological study of asbestos processing industries, are presented. From these data concentration ranges are derived which yield significant differences between typical sample groups. Variance ratio tests of different methods of counting and analysis were made and count weight ratios based on magnesium analyses for asbestos were calculated. There are 13 references. -- Authors' abst.

...NE ...NSTITUTE, PITTSBURGH, PA.

CLASSIFIED SUBJECT		FELLOWSHIP NUMBER	FILE NUMBER
	6/68	NFC	752

AUTHOR: Elmes, P. C.

TITLE: The Epidemiology and Clinical Features of Asbestosis and Related Diseases

JOURNAL	VOL.	PP	DATE	ABSTR. REFS	VOL.	PP	DATE
Postgrad Med. J.	42	623-35	Oct., 1966	APCA ABSTS.	13	7	March, 1968

ABSTRACT

Pulmonary fibrosis caused by asbestos dust has become less common since the introduction of dust suppression measures in 1932-33. However, in occupations where these safety measures are not observed, asbestosis is still a threat. Symptoms of asbestosis are breathlessness on exertion, productive cough, tightness in the chest, clubbing of fingers, warts, cyanosis, restricted chest movement, kyphosis, and fine rales heard over the lung bases. Changes in x-rays are not conclusive, since they also occur with other forms of chronic diffuse fibrosis involving the pleura. No laboratory tests except lung biopsy are diagnostic of asbestosis but sputum examination and respiratory function tests help to support the diagnosis. Carcinoma of the lung resulting from exposure to asbestos appears to be common in patients whose exposure to the dust was insufficiently long or intense to cause crippling fibrosis. The rapidly increasing number of cases of fatal mesothelioma of the pleura and peritoneum have been definitely traced to exposure to asbestos dust. The degree of exposure in many cases is slight and there can be a long interval between exposure to the pollutant and the development of the tumor. Preventive measures recommended are restriction of use and greater precaution in the handling of all types of asbestos. Crocidolite fiber, in particular, should be eliminated from commercial use. -- APCA Absts.

CONT'D:

DATE EXAMINED: BY:

PURPOSE OF SEARCH:

MEDICAL INSTITUTE PITTSBURGH PA.

FORM 77

ABSTRACT NUMBER	DATE		NFC	FILE NUMBER
	11/67			752

AUTHOR: A. Martin

TITLE: Dust Measurement in Plants With Asbestos Processing Machinery

ORIG. REF'S.	VOL.	PP.	DATE	ABSTR. REF'S.	VOL.	PP.	DATE
Staub Reinhaltung der Luft (English Ed.)	26	14-16	Oct. 1966	Public Health Eng. Abstr.	17	252	Aug. 1967

ABSTRACT:

Systematic measurements of dust concentration began about 10 years ago in the asbestos processing branch of the textile industry. Long-term observations have given basic data for dust concentrations occurring in the individual processing stages. Statistical evaluation of these dust measurements shows that there has been a continuous decrease in dangerous dust concentration. -- English summary cond., Public Health Eng. Abstr.

MELLON INSTITUTE, PITTSBURGH, PA.

MELLON INSTITUTE, PITTSBURGH, PA.

CONTRACT NUMBER	DATE			FILE NUMBER
	2/67		FC	752

AUTHOR J. Lieben

TITLE Malignancies in Asbestos Workers.

ORIG. REF'S.	VOL.	PP.	DATE	ABSTR. REF'S.	VOL.	PP.	DATE
Arch. Environ.	13	619	Nov. '66				
Health		621					

ABSTRACT

A study of 68 hospital admissions with asbestosis from an asbestos textile and friction materials plant included 21 malignancies — 13 of these were carcinoma of the lung and eight carcinomas of other organs. Eighteen of the patients had exposures to asbestos in their occupational environment for a period of 10 to 36 years. Only three patients had their first exposure after 1940. Extensive dust control measures have been instituted by the plant. There are six references.

-- Author's summary

AUTHOR B. Pernis, et al.

TITLE Observations on the Effect of Asbestos on Cells in Vitro.

ORIG. REFS.	VOL.	PP.	DATE	ABBR. REFS.	VOL.	PP.	DATE
Med. Lavoro	57,	721	Dec., 1966	J. Occ. Med.	9	586	Nov., 1967

ABSTRACT:

Studies were made on the effects of different kinds of asbestos on various types of cells in vitro. Results showed that both guinea pig peritoneal macrophages and mouse L fibroblasts phagocytose asbestos dust actively. An attempt to induce the formation of asbestos bodies in vitro by adding asbestos to KB tumor cells cultivated in vitro with the addition of $FeSO_4$ failed. These experiments indicate that the mechanism of the production of asbestosis is probably different from that of silicosis and that a direct effect of asbestos dust on fibroblasts should be seriously considered.

-- Mod. from J. Occ. Med. Abstr.

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10M 4-64

FORM 77

MELLON INSTITUTE, PITTSBURGH, PA.

ABSTRACT NUMBER	DATE			
	7/66		NFC	752

AUTHOR W. C. Hueper

TITLE Occupational and Non-Occupational Exposures to Asbestos.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR REFS.	VOL.	PP.	DATE
Ann. N. Y. Acad. Sci.	132	184-196	Dec. 31 1966	APCA Absts.	11	6	Apr. '66

ABSTRACT:

The sources and types of occupational and non-occupational exposures to asbestos and various occupational and non-occupational population groups having such contacts are presented. The biologic functional and anatomic effects associated with and produced by the inhalation of asbestos dust are discussed. Asbestosis and asbestos cancer hazards related to an inhalatory exposure exist not only for asbestos workers engaged in direct and regular production, processing, handling, and use of asbestos containing materials, but also for the large number of individuals who may have contacts on an incidental basis. The rise in the production and industrial use of asbestos has resulted in a widened exposure to asbestos dust for an increased number of workers. The principal worker groups exposed to respiratory contact with asbestos are employed in the mining and milling industries, the production and commercial use of asbestos cement and plaster, and secondary products. There are 91 references. -- APCA Absts.

	3/69	NUMBER	NFC 752

AUTHOR: H. Bohlig

TITLE: Pathological Symptoms Due to Inhalation of Asbestos Dust.

ORIG. REFR.	VOL.	PP.	DATE	ABSTR. REFR.	VOL.	PP.	DATE
Zentr. Arbeitsmed u. Arbeitsschutz.	16	353-55	Dec., 1966	APCA Absts.	14	22	Oct. '68

AB In brief literature review, in which authors are mentioned but no references cited, the problem of asbestos dust as a carcinogenic substance is surveyed. Despite greatly increased preventive measures taken in many asbestos plants, and the resultant reductions in cases of asbestosis, problems of asbestos inhalation have acquired new significance during the past five years. The retrospective examination of mesothelioma autopsy material in various countries has implicated asbestos dust as a malignant-tumor inducing agent, not only in asbestos workers but even in others. The well-known "pleura-plaques" of asbestosis and diffuse mesotheliomas have been observed in individuals who had never had occupational contact with asbestos but who had resided in the vicinity of asbestos plants or mines. It can be stated with assurance that pollution of the ambient air (emission) by asbestos factories—which were relatively late in utilizing the asbestos dust of their dedusting installations instead of simply releasing it to the atmosphere—has been a causative factor in a significant increase in the rate of appearance of both pleural plaques and mesotheliomas. Whether or not the quantities of asbestos dust released into the atmosphere from brake linings of automobiles are also responsible for these malignancies is a question which has yet to be determined; however, asbestos was detected histologically in the lungs of city dwellers not exposed occupationally in the following percentages: Pittsburgh, 41.0%; Miami, 27.9%; Cape Town, 26.4%. Individuals endangered by asbestos, in addition to those just cited, include persons who have occasional contact with asbestos in construction or other activities (such as roofers, insulation specialists). The properties of asbestos ores, including their benzopyrene content, are briefly mentioned. --APCA Absts.

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ABSTRACT NUMBER	DATE			FILE NUMBER
	4/67	364	FC	752

AUTHOR: B. Pernis, et al.

TITLE: Observations on the Effect of Asbestos on Cells "In Vitro."

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Med. lavoro	57	721-29	Dec. '66				

ABSTRACT:

Experiments have been conducted on the effects of asbestos dust on different kinds of cells cultivated in vitro. Guinea pig peritoneal macrophages phagocytose asbestos dust very actively but in contrast to what happens after phagocytosis of silica dust, are not damaged by the mineral as assessed by morphological observation or measurement of their glycolytic activity. Mouse fibroblasts, cultivated in vitro in the presence of asbestos, also take up the mineral quite actively and, when viewed afterwards with the electron microscope, show the mineral particles or short fibers collected in vacuoles or lysosome-like bodies in their cytoplasm; the amount of collagen produced by fibroblasts in vitro, with respect to the other proteins, is higher when these cells are cultivated in the presence of asbestos. Finally, an attempt has been made to induce the formation of asbestos bodies in vitro by adding asbestos to KB cells cultured in vitro with the addition of ferrous sulfate; this attempt failed. With respect to the problem of the pathogenesis, these experiments indicate that the mechanism of the production of asbestosis is probably different from that of silicosis and that a direct effect of asbestos dust on fibroblasts should be seriously considered.

-- Authors' summary modified

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FORM 79

CLASSIFIED SUBJECT: 11/66 | FELLOWSHIP NUMBER: 1036 | FILE NUMBER: 752

AUTHOR: Lauri Meurman

AUTHOR'S POSITION AND ADDRESS:

TITLE: Asbestos Bodies and Pleural Plaques in a Finnish Series of Autopsy Cases.

Available from: Central Hospital of Kuopio and the Dept. of Path. Anatomy, University of Turku, Finland

PUB. DESIGNATION AND SERIAL NO.: | REVIEWED IN: | VOL. | PP. | DATE

PLACE PUBLISHED AND PUBLISHER:

EDITION: | DATE: 1966 | VOL.: | LIST PRICE: Not Given.

PAGES: 107	GRAPHS:	GENERAL:	THEORETICAL:	ECONOMIC:	EXCELLENT:
DISCUSSION (PP.):	ILLUSTRATIONS:	REVIEW:	MATHEMATICAL:	ADMINISTRATIVE:	GOOD:
REFERENCES:	MAPS:	POPULAR:	EXPERIMENTAL:	PROPAGANDA:	FAIR:
CONCLUSIONS:	COST DATA:	ENGINEERING:	STATISTICAL:		USELESS FOR PURPOSE:
TABLES:	INDEX: AUTH.: SUBJ.:	ORIGINAL AVAILABLE AT:		CALL NO.:	

ABSTRACT:

Meurman undertook the monumental task in 1963-64 of studying a series of 438 consecutive autopsy cases of subjects aged 15 years and older, collected from three separate Finnish hospital districts, the cases falling into three groups. Recognizing that routine autopsy cases from general hospitals are primarily selected and thus *do not* fulfill the strict criteria of an epidemiological investigation, he has subjected the relationship between the frequency of pleural plaques and asbestos bodies to statistical analysis and presents the results. The frequency of cases with

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plaques was about the same in two of the three hospital districts investigated in different parts of Finland, whilst in the third it was lower. Plaques [illegible]d to be an equally common finding in a district in southwest Finland with no asbestos deposits and no particular asbestos industries, as in a district in east Finland with an asbestos mine and mill and extensive anthophyllite asbestos deposits near its eastern border. Plaques were encountered in 52.2% of the urban population and 1.8% of the rural population. Asbestos bodies in the lungs and pleural plaques occurred more often in conjunction than separately. Pleural plaque formation, in particular when bilateral, and the occurrence of asbestos bodies in the lungs appear to have some etiological factor in common. The dust which induces the formation of asbestos bodies does not, however, seem to be the sole cause of plaque formation.

EDITOR'S NOTE: In this regard the author's findings are similar to those reported by Kenneth W. Smith, M.D., in the section on "Asbestosis" in Lanza's "The Pneumoconioses:" "If inhalation of the asbestos fibre alone could cause these plaques, one would expect to find plaques wherever the fibre is used." (See Industrial Hygiene Digest 27:5 p. 4, May 1963.) -- RTP deT

NUMBER	DATE			FILE NUMBER
	7/66		NFC	752

AUTHOR Anon.

TITLE Biological Effects of Asbestos.

PUBLICATION	VOL	PP.	DATE	ABSTR. PUBL.	VOL.	PP.	DATE
Ann. N. Y. Acad. Sci.	132	1-766	Dec. 31 1966	APCA Abstr.	11	6	Apr. '65

ABSTRACT:

Trichloroacetic acid (TCA) extracts of moldy hay contained three antigens that produce precipitins with a typical farmer's lung serum. These antigens were fractionally precipitated with ethanol; antigens were present in the fractions precipitated between the limits of 50 to 60%, 60 to 70%, and 70 to 90% alcohol. Each of these alcohol fractions were further purified on diethylaminoethyl (DEAE-) cellulose and analyzed for sugars and amino acids. It is concluded that these TCA-soluble antigens involved in farmer's lung disease are composed of peptides and carbohydrates that were not separated by TCA extraction, alcohol fractionation, or by chromatography on DEAE- cellulose ion exchange columns. There are 13 references. -- Public Health Eng. Abstr.

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ABSTRACT NUMBER	DATE			FILE NUMBER
	1/67	/	FC	752

AUTHOR Li'a Anjilvel and W.M. Thurlbeck.

TITLE The Incidence of Asbestos Bodies in the Lungs at Random Necropsies in Montreal.

ORIG. REF.	VOL.	PP.	DATE	ABSTR. REF.	VOL.	PP.	DATE
Can. Med. Assn. J.	95	1179-1	82 Dec. 3, '66				

"Asbestos bodies were found in the lungs of 48 of 100 random adult necropsies performed in four hospitals in Montreal. The proportion of positive smears depended on the technique and amount of lung sampled: this made comparison with other similar surveys difficult. Asbestos bodies were more common in men, whose lungs were also more heavily contaminated. No association was noted between the presence of asbestos bodies and death from malignant disease. The only criteria used in the present study for the recognition of asbestos bodies was their morphological appearance. These bodies are the same morphologically as those in asbestosis, and are quite easy to distinguish from pseudoasbestos bodies and other atypical bodies in deeply pigmented lungs. It may be that these structures are not formed by asbestos fibres at all, although this does not appear likely at the present time. Whatever their origin or structure, asbestos bodies are common in a high proportion of cadavers in Montreal. For this reason, asbestos is probably a significant air contaminant.

EDITOR'S NOTE: Recent studies by Dr. Paul Gross reported at the Foundation's 31st Annual Meeting demonstrate ability to produce typical ferruginous (so-called asbestos) bodies with filamentous aluminum silicate;and a variety of other filamentous dusts are being examined by Dr. Gross to determine their potential in this regard. The high incidence of ferruginous bodies in lungs of urbanites merits careful consideration but is not, of itself, adequate proof of asbestos exposure. The Foundation's current research is described in Medical Series Bulletin No. 11, "Asbestos Bioeffects Research for Industry," now in distribution. -- RPT deT

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ABSTRACT NUMBER	DATE			FILE NUMBER
	5/67	454	NFC	753

AUTHOR: F. M. Kogan, et al.

TITLE: On the Carcinogenic Effect of Asbestos Dust

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Gigiena i Sanit.	31	28-33	1966	Public Health Eng. Abst.			
No. 8					46	417	12/66

ABSTRACT:

When the death rate from lung cancer between 1953 and 1962 was compared among asbestos workers, the town population, and the Sverdlovsk region population, the rate among workers was three times that of town dwellers and the rate of the town dwellers was two times that of the general population of the region. The possible causes of increased mortality among those inhaling asbestos dust are discussed. There are 27 references. -- Public Health Eng. Abst.

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ABSTRACT NUMBER	DATE			FILE NUMBER
	8/67	224	FC	752

AUTHOR: I Ghezzi, G. Molteni, and U. Puccetti

TITLE: Asbestos Bodies in the Lungs of Inhabitants of Milan.

PUBLICATION	VOL.	PP	DATE	ABSTR REPO	VOL.	PP.	DATE
Med. Lavoro	58	223-227 (in English)	3/67				

ABSTRACT:

The incidence of asbestos bodies in the lung of adult inhabitants of Milan was studied by lung smears obtained at autopsy, following the same technique used by Thomson and by Cauna et al. None of the individuals studied had been occupationally exposed to asbestos. Asbestos bodies were found in 51 out of 100 subjects studied. The incidences observed were 54% for men and 49% for women. Positive cases were more frequent in the oldest group of subjects and in those showing evidence of pulmonary edema. In one case, positive for asbestos bodies, a slight pulmonary fibrosis was histologically demonstrated but no case of clear-cut asbestosis was found. No parietal pleura plaques or thickening were found in any of the 65 subjects accurately studied from this point of view, 35 of whom were positive for asbestos bodies. -- Authors' summary

CLASSIFIED SUBJECT		FELLOWSHIP NUMBER	FILE NUMBER
	9/68	NFC	752

AUTHOR: I. Ghezzi, G. Molteni, and U. Puccetti

TITLE: Asbestos Bodies in the Lungs of Inhabitants of Milan

ORIG. REFS:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Med. lavoro	58	223-227	March, 1967	APCA Absts.	14	15	June, 1968

ABSTRACT

The incidence of asbestos bodies in the lungs of 100 inhabitants of Milan (aged 25-83, 64 males) was studied by lung smears obtained at autopsy. None of the subjects was believed to have been occupationally exposed to asbestos. Asbestos bodies were found in 51 (51%) of the autopsies, with 51% of the cases observed in males, and 44% in females. The older subjects (older than 50) exhibited asbestos bodies more frequently than the younger subjects. No parietal pleural plaques or thickenings were found in any of a group of 65 subjects examined, 35 of whom were positive for the presence of asbestos bodies. --APCA Absts.

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FORM 77

12/67 | / | NFC | 752

AUTHOR: I. J. Selikoff, et al.

TITLE: Asbestosis and Neoplasia.

ORIG. REFS	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Am. J. Med.	42	487-496	April, 1967	APCA Abstr.	13	13	Sept., 67

ABSTRACT:

The prediction that asbestos-induced neoplasms will rival cigarette-induced lung cancer in the next several decades is reviewed as well as the present state of our knowledge of the role of asbestos in pulmonary asbestosis lung cancer, mesothelioma, other neoplasms, and pleural calification. The progression of asbestos disease without continued exposure and the diagnosis of asbestos disease are reviewed also. All of the conditions arising from asbestos are slow in developing. The neoplasms now encountered in both industry and in the general public are the result of the inhalation of asbestos associated with the limited asbestos production of 30 years ago. The neoplasms associated with the present utilization of and exposure to asbestos will not be evident until the 1990's. From 50 tons a year 90 years ago, the world production is now 4 million tons a year. Asbestos has been described as the fiber with a half life of infinity. In at least 1/4 of the adults who die in the U.S. and other industrial countries, asbestos bodies are found in the lung. At present, in most cases, neither pulmonary fibrosis nor neoplasia is associated with the asbestos now being found postmortem. There are many questions which have to be answered such as: whether different kinds of fibers exert the same biological effects; the nature of the dose-disease relationship; sources and extent of environmental contamination; the range of industrial exposure; the range of neoplastic effects of asbestos exposure; and whether asbestos bodies may not sometimes result from mineral fibers other than asbestos.

-- APCA Abstr.

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CLASSIFIED SUBJECT: 3/69

FELLOWSHIP NUMBER: NFC

FILE NUMBER: 752

AUTHOR: J. Cuthbert

TITLE: The Community Hazards of Asbestos

ORIG. REFS:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Muench. Med. Wochsch. 109		1369	72 Apr. - June, 1967	APCA Absts.	14	22	Oct. '68

AB The inhalation of asbestos is far more dangerous than is generally recognized by the public, since even a transient period of exposure can lead to disease (interstitial fibrosis of the lung, lung cancer, mesothelioma, endothelioma of the pleura and the peritoneum, painful dermal warts) and death many years later. Electron microscopic studies have shown that for every asbestos fiber recognizable under an ordinary (light) microscope, there are hundreds of tiny unrecognized particles, which dust experiments with guinea pigs have shown to be just as deadly as the larger fibers. While the asbestos industry has taken energetic measures toward the prevention of classical forms of asbestosis by dust elimination in its plants (vacuum removal of the dust, use of gas masks, automation of manufacturing processes), such prophylactic measures have not prevented the gradual long-term development of cancer in persons who come into occasional, slight, or temporary contact with asbestos. This group certainly includes wives of asbestos workers and all persons living within 1.5 km of an asbestos plant; these persons tend to succumb to mesothelioma after many years of such contact. A number of examples are given, including those of carpenters and construction workers, who do not realize that their relatively brief contact in sawing or handling asbestos materials can lead to lung cancer many years later. The great increase in asbestos production and in asbestosis in recent years is tabulated; the need for utilization of alternate materials in industry, and for further research on biological effects is emphasized. The presence in asbestos of carcinogenic oils and other components, including benzopyrene and chromium, is mentioned. --APCA Absts.

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ABSTRACT NUMBER	DATE			FILE NUMBER
	8/67	777	FC	752

AUTHOR J. Lieben and H. Pistawka,

TITLE Mesothelioma and Asbestos Exposure.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Arch. Environmental Health	14	559-568	4/67				

ABSTRACT:

Forty-two cases of mesotheliomas reported from 152 hospitals over a five-year period, were studied with regard to exposure to asbestos. Survivors or employers, or both, were questioned regarding the possibility of asbestos exposure. Ten patients actually worked in asbestos plants: eight lived or worked close to an asbestos industry; three patients were family members of asbestos workers. In ten patients a history of assumed exposure to asbestos was obtained after prolonged questioning. In 11 other patients no history of asbestos exposure could be obtained. -- Authors' summary

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ABSTRACT NUMBER	DATE			FILE NUMBER
	7/67	677	FC	752

AUTHOR: T. F. Mancuso and A. A. El-Attar.

TITLE: Mortality Pattern in a Cohort of Asbestos Workers. A Study Based on Employment Experience.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
J. Occ. Med.	9	147-162	4/67				

ABSTRACT:

Mortality Pattern in a Cohort of Asbestos Workers. A Study Based on Employment Experience. T. F. Mancuso, and A. A. El-Attar. J. Occ. Med. 9, 147-162 (April, 1967).

A cohort study of 1265 white males and 228 white females who were employed in a plant manufacturing asbestos products in 1938-1939 was established through Social Security records and observed in mid-1964. It was observed in this study that when the 1938-1939 cohort was considered as individual groups, that 1939 had a lower mortality experience than 1938. There was a consistent increase in the average mortality rates as the cumulative employment experience increased. This was true for each of these categories with the exception of the digestive system, which involved a smaller number of cases and analysis could not be made. The duration of cumulative employment experience among asbestos workers in the asbestos-products company was directly related to a general increased mortality rate for all causes of death and specifically for malignant neoplasms, cardiovascular diseases, and asbestosis.

-- Cond. from authors' summary

MELLON INSTITUTE, PITTSBURGH, PA.

CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	1/68	45	NFC	752

AUTHOR: G. Macnab and J. S. Harington.

TITLE: Haemolytic Activity of Asbestos and Other Mineral Dusts.

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Nature	214	522-523	April 29, 1967	Public Health Eng. A.	47	292	Sept., 1967

ABSTRACT:

Chrysotile asbestos was found to be as potent a hemolytic agent as silica powder, but both differ in the nature of their hemolytic action. Under the same conditions, chrysotile adsorbs 5 times more protein from serum than silica. Chrysotile also has the highest Mg/Si ratio of the 3 forms of asbestos tested and differs also in that iron is not formally included in the lattice. There are 10 references. -- Public Health Eng. Abstr.

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ABSTRACT NUMBER	DATE			FILE NUMBER
	7/67	C78	NFC	752

AUTHOR: A. Hany, P. Burckhardt, and A. Bühlmann.

TITLE: Clinical and Patholphysiological Findings in Pulmonary Asbestosis.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Schweiz. med. Wochschr.	97	597-602	5/13/67	J. Am. Med. Assn	200	237	6/5/67

ABSTRACT:

Clinical and Pathophysiological Findings in Pulmonary Asbestosis. A. Hany, P. Burckhardt, and A. Bühlmann. Schweiz. med. Wochschr. 97, 597-602 (May 13, 1967).

The pertinent clinical and functional data in eight patients with pulmonary asbestosis contracted in a Swiss factory are summarized. Asbestosis causes diffuse pulmonary fibrosis, with a decrease in pulmonary compliance and a reduction in lung volume. Advanced restriction leads to impairment of diffusion and cor pulmonale. There is only slight elevation of airway flow resistance. Reduced compliance may precede the radiological signs of fibrosis. The prognosis in advanced cases is poor and, therefore, early diagnosis and ending of exposure to asbestos are of great importance. -- J. Am. Med. Assn. References & Reviews

MELLON INSTITUTE, PITTSBURGH, PA.

ABSTRACT NUMBER	DATE			
	9/67	867	N FC	752

AUTHOR: J. Cuthbert.

TITLE: Danger of Asbestos for General Population.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Munch. med. Wochschr.	109	1369-1372	6/23/67	J. Am. Med. Assoc.	201	153	7/17/67

ABSTRACT:

Formation of asbestos bodies and the development of interstitial pulmonary fibrosis are possible sequelae of the inhalation of asbestos. The increase in pulmonary carcinoma can be traced back to extensive contact with asbestos and to asbestosis. Heavy air pollution with asbestos dust leads to the classical form of asbestosis. A decrease in asbestos dust possibly provides the time necessary for the development of the carcinogenic effect of asbestos. Cases are presented in which endotheliomas have formed many years after a short contact with asbestos. Increased import and use of asbestos increase the danger connected with it. Carpenters who manufacture asbestos plates or persons who live in the neighborhood of asbestos factories, are especially exposed. -- J. Am. Med. Assn. References & Reviews

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MELLON INSTITUTE, PITTSBURGH, PA.

NUMBER	DATE		FILE NUMBER
110/67		NFC	752

AUTHOR: M. C. S. Kennedy and R. Routledge

TITLE: Investigation of a Minor Asbestos Hazard

PUB. REF'S.	VOL.	PP.	DATE	ABSTR. REF'S.	VOL.	PP.	DATE
Brit. J. Ind. Med.	24	232-239	July, 67				

ABSTRACT:

Twelve men who had been exposed to a minor asbestos hazard have been examined clinically, radiologically, and physiologically, and an assessment of the airborne asbestos concentration has also been made. Ten men had worked in a transformer department lagging transformer windings with asbestos paste for between 15 and 37 years. Two of these men showed minor radiological and minor physiological changes suggestive of early asbestosis. Two insulation workers had been engaged in milling and sawing asbestos sheets for five and 23 years respectively; both men showed minor radiological and abnormal physiological changes. These two men had been exposed to higher airborne concentrations of the asbestos dust than the transformer men. It is impossible to be dogmatic concerning the aetiology of these pulmonary changes, and further follow-up studies are planned. However, the findings are presented in view of the recommendation by Gilson (1966) that more evidence is required concerning possible pulmonary changes in men exposed to low concentrations of asbestos. - Author's Abst.

MELLON INSTITUTE, PITTSBURGH, PA.

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CLASSIFIED SUBJECT		FELLOWSHIP NUMBER	FILE
3/68		FC	752

AUTHOR: P. E. Enterline and Mildred A. Kendrick.

TITLE: Asbestos-Dust Exposure at Various Levels and Mortality.

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.
Arch. Environ. Health	15	181-186	Aug, 1967			

ABSTRACT:

A study was conducted on the mortality experience up to 16 1/2 years of 21,755 white male three asbestos products industries and comparisons were made with the mortality experie 6,281 white males in an industry without asbestos dust exposures and with the mortality ex of the entire U.S. white male population. An elevated death rate for all causes was found among workers in the asbestos textile industry, an industry which has probably had heavy dust exposures. The other two asbestos products industries—asbestos building products asbestos friction materials—probably had considerably lower levels of asbestos-dust exp and here death rates for all causes were below those experienced in all U.S. white males, nearly identical to those among workers in the industry without asbestos-dust exposures. believed that asbestos-dust exposures among workers in the asbestos building products in and the asbestos friction materials industry greatly exceeded those in modern urban comm and that the modest response of the workers in these industries indicates that asbestos levels to which general populations are exposed probably is of little importance in the et of disease. There are 11 references. -- Cond. from authors' sum

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3/68		FC	752

AUTHOR: M. Kleinfeld, Jacque[illegible] Messite, and Olive Kooyman.

TITLE: Mortality Experience in a Group of Asbestos Workers.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Arch. Environ.	11th 15	177-180	Aug, 1967				

ABSTRACT:

Mortality data on 46 asbestos insulators in New York state who had 15 or more years of exposure to asbestos dust by 1945 or had achieved 15 years of exposure between 1945 and 1965 were reviewed. The average age at death was 60.3 years with a range of 33 to 81 years. There were 12 deaths due to malignancies of lung or pleura. The differences in the mean age and mean duration of exposure for the 46 deaths and the group that developed cancers of lung or pleura were not statistically significant. Six references are given. -- Cond. from authors' summary

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MELLON INSTITUTE, PITTSBURGH, PA.

FORM 77 10M 4-66

6/68 | NFC | 752

AUTHOR: Borow, M., et al.

TITLE: Mesothelioma and Its Association With Asbestosis.

ORIG. REF'S	VOL.	PP.	DATE	ABSTR. REF'S	VOL.	PP.	DATE
JAMA	201	587-91	Aug. 21, 1967	Am. Rev. Resp. Dis.	97	748	Apr., 1968

ABSTRACT:

Within a three-year period 17 cases of mesothelioma (9 of the pleura and 8 of the peritoneum) were seen at a community hospital in New Jersey located near a major asbestos mill. The incidence of mesothelioma as well as asbestosis appears to be increasing.

-- Am. Rev. Resp. Dis. Absts

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FORM 77

CLASSIFIED SUBJECT

2/68 | NFC | 752

AUTHOR: I. M. Freundlich and R. R. Greening.

TITLE: Asbestosis and Associated Medical Problems.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Radiology	89,	224-229	Aug, 1967	Public Health E. A.	47,	374	Nov., 1967

ABSTRACT:

Pulmonary roentgenologic changes were found in 56 of 187 asbestos workers. Pleural thickening was the most common finding, often associated with parenchymal fibrosis. Various reports from the literature, indicating an increased incidence of bronchogenic carcinoma and mesothelioma in asbestos workers, were summarized, and asbestos as a possible urban hazard was discussed. There are 53 references. -- Authors' abst., Public Health Eng. Abstr.

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MELLON INSTITUTE, PITTSBURGH, PA.

CLASSIFIED SUBJECT: 6/68

562

NUMBER: NFC 752

AUTHOR: Nakamura, I.

TITLE: Clinical and Pathological Studies of Pulmonary Asbestosis.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Nara Med. Assn.	18	455-65	Aug., 1967	APCA Absts.	13	)	March, 1968

ABSTRACT:

The environmental conditions in asbestos factories in Osaka and Nara were investigated. The nature of the dust in the factories was studied by electron microscopy. The concentration of suspended particles is tabulated for different plant operations in a Nara factory. The occurrence of asbestosis among the employees of these factories was studied by periodic x-ray examinations. Although definite asbestosis could not be found in employees working less than 5 years, the frequency of detection of definite asbestosis increased in those working more than 5 years as follows: there was 21% in those employed between 5 and 10 years, 54% between 10 and 15 years, 70% between 15 and 20 years, and 100% for those employed for over 20 years. The classification of x-ray findings and the development of asbestosis are discussed. Case histories and photographs of x-rays and lung sections are presented. -- APCA Absts.

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FORM 77

10/68 | NFC | 752

AUTHOR J. L. Elder

TITLE Asbestosis in Western Australia

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Med. J. Australia	2	579-83	Sept. 23, 1967	Am. Rev. Resp. Dis.	98	355	Aug. '68

ABSTRACT

Thirty-one patients with asbestosis or asbestosis with silicosis have been studied at Sir Charles Gairdner Hospital over a five-year period. Twenty-eight patients worked at Wittenoom Gorge and 3 patients, at an asbestos cement works. The diagnosis of asbestosis was made on the basis of a history of exposure, results of pulmonary function tests characteristic of the diffuse interstitial fibroses, and compatible roentgenographic changes. From a study of these patients, the following points emerged. (1) Under work conditions at Wittenoom Gorge in the 1950's, a period of one and one-half to 12 years' exposure was sufficient to produce appreciable disability and death in 7 patients whereas at the cement works, prior to 1956, a period of 17 to 27 years was necessary to produce disability, with death in only one patient. (2) Asbestosis often progresses after cessation of exposure, and pulmonary infection appears to accelerate this progress. (3) Once roentgenographic changes are obvious, the disease is well advanced and, as a corollary, a diagnosis of asbestosis on roentgenographic examination of the chest in early cases is extremely difficult and there is much observer variation, even among experts. (4) In an asbestos worker, a change in vital capacity in some instances may indicate asbestosis before there is a definite change on the chest film. As a prophylactic measure, estimation of the vital capacity before employment and at yearly intervals thereafter, in addition to the yearly examination of the chest film, may indicate which workers should move to a less hazardous industry. (5) Steroids do not appear to play any part in arresting the progress of the disease.

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In fact, as infection tends to accelerate fibrosis in the experimental animal, and clinically in man, steroids are best avoided. In none of the 31 patients studied did calcified pleural plaques or mesothelioma develop, and bronchial carcinoma occurred in only one patient; but these complications would not be expected in the patients at Wittenoom Gorge for another 10 to 20 years. --Am. Rev. Resp. Dis. Absts.

Editor's Note: See also Abstract No. 912, this issue. Readers concerned about asbestos bioeffects will be interested in the program of the Foundation's 3rd Fibrous Dust Seminar (see Editorial, this issue). --R. T. P. deT.

CLASSIFIED SUBJECT: 12/67

FILE NUMBER: FC 752

AUTHOR: P. Gross.

TITLE: Experimental Asbestosis. The Development of Lung Cancer in Rats With Pulmonary Deposits of Chrysotile Asbestos Dust.

ORIG. REFR.	VOL.	PP.	DATE	ABSTR. REFR.	VOL.	PP.	DATE
Arch. Environ. Health	15	343-355	Sept. 1967				

ABSTRACT:

One hundred and thirty-one rats were exposed to chrysotile asbestos, finely milled, in an exposure chamber for six hours a day, five days a week for a maximum of 62 weeks. Dust concentrations were very heavy, ranging from 42 to 146 mg/cu m (average 86 mg/cu m). About half the animals exposed also had intratracheal application of caustic (lye) to reduce lung clearance and maximize dust retention and pathogenicity. Also, 64 additional animals were given intratracheal injections of chrysotile dust, 14 receiving single doses and the remainder multiple injections of 3.5 mg each. Controls consisted of 30 untreated, unexposed animals and 15 rats treated with caustic but unexposed to asbestos. Designed to study asbestosis the most important findings of the investigation related to lung tumor production. Other investigators have not been successful in producing lung cancer experimentally in rats with chrysotile. Tumor incidence was high. Of those surviving 16 or more months (ie, after appearance of the first tumor) 31% had primary malignant tumors of the lung. Occurrence in rats treated with lye was 48%, twice the rate of those exposed but not treated with caustic. Malignant pulmonary tumors included adenocarcinomas, fibrosarcomas, and squamous cell cancers as well as a mesothelioma and a mucinous adenocarcinoma. A number of pulmonary lymphoblastomas which occur spontaneously in rats were not counted. Also, atypical metaplasia, not manifestly malignant, was commonly noted. Multicentricity of malignant lesions was observed in several animals. Results of this study support the unitarian concept of tumor origin from alveolar cells. Despite extreme exposure conditions, diffuse asbestosis was not seen.

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3/68 FC 752

AUTHOR W. C. Cooper.

TITLE Asbestos as a Hazard to Health. Fact and Speculation.

ORIG. REF'S	VOL.	PP.	DATE	ABBR. REF'S	VOL.	PP.	DATE
Arch Environ. Hlth	15,	285-290	Sept, 1967				

ABSTRACT:

With the increasing use and indispensability of asbestos minerals, there has come realization of some very real hazards that must be better defined and controlled. Present standards for dust control do not appear adequate to prevent asbestosis over a working lifetime, and many segments of industry aggressively attacking the problem have already been using more rigorous standards. The associations between asbestos minerals and malignancies of the lungs, pleura, and peritoneum have become increasingly convincing. Current efforts must be directed toward better definition of the importance of type, size of fiber and the importance of co-factors. It has been suggested that asbestos fibers act as carriers of carcinogenic metals or other substances to vulnerable sites. The demonstration of ferruginous bodies in from one-quarter to one-half of the lungs examined in consecutive autopsies in a number of cities around the world points to an urgent need for the positive identification of the mineral fibers that are responsible. If they prove to be asbestos, we do not know what point on the dosage response curve is represented and consequently are not now in a position to estimate their significance in terms of human health. There are 31 references.

-- Author's summary

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FORM 77 10M 4-67

CLASSIFIED SUBJECT: 2/68 | J.O.S. | NUMBER: FC 752

AUTHOR: L. J. Cralley, R. G. Keenan, and J. R. Lynch.

TITLE: Exposure to Metals in the Manufacture of Asbestos Textile Products.

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Am. Ind. Hyg. Assn.	28	152-46	Sept-Oct.	1967			

ABSTRACT:

Asbestos textile workers processing chrysotile were exposed in the past, to significant airborne levels of nickel, chromium, and manganese. Limited studies indicate that other metals were also involved. It is likely that the phenomenon shown in asbestos textile manufacturing is also true in other asbestos mining, milling, and processing operations. Sufficient evidence is presented in this study to indicate that the role of metals in the etiology of disease associated with asbestos inhalation should not be ignored. It is no longer tenable to look only for asbestos fibers or bodies in biological tissue and by their presence assume a cause and effect relationship with the disease. There are 22 references. -- Authors' abst.

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CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	6/68		NFC	752

AUTHOR Norwood, W. D., Fuqua, P. A., and Mancuso, T. F.

TITLE Asbestos--An Environmental Health Hazard.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Northwest Med.	66	821	Sept., 1967.	J. Occ. Med.	10	52	Jan., 1968.

ABSTRACT:

Four Case Reports demonstrate asbestosis with pulmonary emphysema and cor pulmonale, asbestosis with lung cancer, mesothelioma, and rectal cancer. The occupational histories of workers as plumbers, boiler makers, carpenters, pipe fitters, steam fitters, mechanics, stationary engineers, undercoaters, foremen, maintenance electricians, builders, rubber workers, construction workers, cement workers, boiler repairers, sheet metal workers and laborers must all be elicited if diagnosticians hope to record the more than 3,000 different exposures to asbestos. For the sake of workers and their dependents with industrial health compensation rights, the diagnostician must not be misled by recent occupational history nor overlook other work exposures within the lifetime of the patients. The obvious need for decreasing the exposure to asbestos by better occupational hygiene programs is recognized but no detailed criteria were presented. Considering the growing uses of asbestos, this occupational and environmental disease may get worse before it gets better. -- J. Occ. Med. Absts.

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FORM 77 10M 4-64

MELLON INSTITUTE, PITTSBURGH, PA.

CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	5/68	4/19	FC	752

AUTHOR: Gross, P., and deTreville, R. T. P.

TITLE: Experimental Asbestosis. Studies on the Progressiveness of the Pulmonary Fibrosis Caused by Chrysotile Dust.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Arch. Environ. Hlth	15	538-49	Nov., 1967				

ABSTRACT:

Rats, hamsters, and guinea pigs were given various lung dust burdens of chrysotile asbestos; some, by inhalation and others, by intratracheal injection. For the rat, chrysotile has about the same order of pathogenicity as quartz dust, insofar as a single intratracheal injection of between 2 and 5 mg of either dust will produce minimal lesions in rats. Evidence for the nonprogressiveness of chrysotile asbestosis in rats consists of the observations that the minimal asbestotic lesion is limited to the wall of the respiratory bronchiole and of the adjoining alveolar ducts and does not extend into adjoining normal alveoli and that the minimal asbestotic lesions heal by becoming collagenized and hypocellular. In hamsters, the asbestotic lesions are not delimited. They are diffuse, cellular, and do not collagenize. These lesions are therefore progressive. The early chrysotile asbestotic lesion in guinea pigs resembles that of rats. The progressiveness of the chrysotile asbestotic lesion in hamsters is ascribed to a less effective pulmonary clearance mechanism and to a greater reactivity of the pulmonary tissue than exist in rats. The efficiency of the clearance mechanism of man approximates more that of the rat than that of the hamster. Man's lung tissue reactivity also more closely resembles that of the rat, being characterized by the ability to heal.

-- Cond. from author's summary.

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FORM 77 10M 4-64

MELLON INSTITUTE, PITTSBURGH, PA.

CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	1/68		FC	752

AUTHOR: P. Gross, L. J. Cralley and R. T. P. deTreville.

TITLE: "Asbestos" Bodies: Their Nonspecificity.

ORIG. REF'S.:	VOL.	PP.	DATE	ABSTR. REF'S.:	VOL.	PP.	DATE
Am. Ind. Hyg. Assn. J	28	541-542	Nov-Dec. 1967				

ABSTRACT:

So-called "asbestos" bodies were produced in the lungs of hamsters injected intratracheally with respirable filamentous particles composed of aluminum silicate. The production of "asbestos" bodies by aluminum silicate challenges the concept that "asbestos" bodies are a pulmonary response specific to inhaled asbestos fibers. Instead of the term "asbestos" body, the designation of ferruginous body is suggested for the iron-containing structure that forms in response to the inhalation of filamentous dust of unknown composition, since the term, "asbestos" body may be misleading and inappropriate. There are 6 references. -- Authors' abst.

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Jagatic, J., et al.

Tissue Response to Intraperitoneal Asbestos With Preliminary Report of Acute Toxicity of Heat-Treated Asbestos in Mice.

ORIG. REFS:	VOL.	PP.	DATE	ABSTR. REFS:	VOL.	PP.	DATE
Environ. Research	1	217-30	Nov., 1967.				

ABSTRACT

Intraperitoneal asbestos not only produced fibrosis, but a special and peculiar type of fibrosis which was proliferative, granulomatous and invasive, and histologically similar to mesothelioma, although morphologic evidence of actual malignancy was not obtained. Further, asbestos fibers exposed to high temperature produced a high degree of toxicity in experimental animals; this resulted in a 60% mortality rate. -- Authors' abst.

Editor's Note: Although the authors of this 14-page article insist that the fibrous inflammatory tissue resulting from intraperitoneally injected asbestos is histologically similar to mesothelioma and that it is "invasive", they gave no evidence in support of these opinions. The 22 illustrations that are included in this report, support neither the claim of similarity to mesothelioma nor that of "invasiveness" of the inflammatory tissue. -- P. Gross

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FORM 77 10M 4-64

CLASSIFIED SUBJECT		FELLOWSHIP NUMBER	FILE NUMBER
	6/68	FC	752

AUTHOR: Tabershaw, I. R.

TITLE: Asbestos as an Environmental Hazard.

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
J. Occ. Med.	10	32-37	Jan., 1968.				

ABSTRACT:

In summary, if one accepts the assumptions (1) that asbestos minerals increase the risk of lung cancer in occupational groups, (2) that they lead to an unusual risk of mesothelioma of the pleura and peritoneum in occupational groups and those living near asbestos plants, (3) that such malignancies usually result from exposures 30 to 50 years earlier, (4) that the "asbestos bodies" found in from 25 to 50% of lung smears from routine autopsies are probably due to asbestos in most cases, (5) that these "asbestos bodies" may result from recent exposures as well as those many years earlier, (6) that world production and use of asbestos has increased from 500,000 tons to 3,500,000 tons in 30 years, it is important to consider whether or not asbestos is a major threat to public health. One is not yet justified in such a conclusion, in view of the fact that much of the world tonnage goes into uses that do not lead to air contamination; that asbestos is not actually indestructible; that the effects are dose-dependent; and that low doses probably lead to lower rates and longer latency. Nevertheless, there is need for epidemiologic studies directed to groups with intermediate exposures and for evaluation of the beneficial effects of cessation of smoking. Another need is for experimental and industrial hygiene studies to determine the nature and degree of exposure. Biologic studies centered on the meaning of the "asbestos body" are crucial to understanding the clinicopathologic response. Strict control of industrial and neighborhood environments is essential, but it is premature to extrapolate from the effects of heavy exposures to minor and low level exposures. There are 15 references. -- Author's summary.

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CLASSIFIED SUBJECT: 6/68 | 557 | NUMBER: FC 752

AUTHOR: Balzer, J. L.

TITLE: Industrial Hygiene for Insulation Workers.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
. Occ. Med.	10	25-31	Jan., 1968.				

ABSTRACT:

The asbestos worker is exposed to amosite and chrysotile asbestos-containing materials, fibrous glass, cork, plastics, and adhesives. Working in industrial and commercial building projects and marine construction and repair, he is exposed to many other environmental hazards not created by his own trade. Although he works with asbestos-containing products 15% of the time, the over-all time-weighted average exposure to asbestos-containing materials is below the presently recognized Threshold Limit Values (TLV) of 5 mppcf. The three work areas in which the dust levels were above the TLV (prefabrication, tearing out, and mixing) account for less than 20% of his total work time. However, the incidence of radiographic changes indicative of asbestosis is over 25% in our men with 20 years or more of work. This and other evidence suggest that the present TLV is too high. Incidence of asbestosis and the risk of malignancies in the asbestos worker can be reduced by local and general ventilation, substitution of materials, changes in work habits and personal respiratory protection combined with education of the men to reduce their own exposures to asbestos-containing dusts. There are 17 references.

-- Author's summary.

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FORM 1

CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	6/68	511	FC	752

AUTHOR Cralley, L. J., et al.

TITLE: Research on Health Effects of Asbestos.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
J. Occ. Med.	10	38-41	Jan., 1968				

ABSTRACT:

Asbestos is a general term applied to a group of fibrous crystalline hydrated silicate minerals. Although a number of different types of asbestos minerals exist, only four or five are of commercial importance. Each differs somewhat from the others in chemical composition, physical properties such as ability to withstand heat and chemical erosion, crystalline structure, fiber dimension, and degree of fiber harshness and brittleness. It has been known since the early nineteen hundred's that excessive exposure to asbestos gives rise to the disabling pulmonary disease "asbestosis." More recently, evidence has been developed that the incidence of respiratory tract and other malignancies in asbestos workers is excessive. A major problem in studying the health effects of asbestos is the long latent period of 20 or more years from initial exposure to the onset of disease. Also in the mid-nineteen thirties and earlier, there was little dust control and the workers were often exposed to massive levels of dust from asbestos and other associated materials in the manufacture of asbestos products. Thus, the causative agents of the resultant disease are essentially unknown. Included in these potential sources of causative agents, either alone or in combination, are asbestos fibers themselves, materials associated with the fibers in the ores such as trace minerals and polycyclic aromatic oils, materials added during processing such as metals, tars, and pitches, and concomitant external exposures to tobacco smoke or other air pollutants. A strong supported long-term program is needed to provide the information regarding the pathogenesis of asbestosis and the other effects that appear associated with the inhalation of asbestos dust. More precise data on the physical

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and chemical characterization of the asbestos minerals which lead to their being inhaled and retained in the body, in their carrying with them other chemicals, in their migration, may open up unsuspected avenues of biological research. -- Cond. from text.

CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	6/68		FC	752

AUTHOR: Lynch, J. R., and Ayer, H. E.

TITLE: Measurement of Asbestos Exposure.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Occ. Med.	10	21-24	Jan., 1968.				

ABSTRACT:

As an outcome of an epidemiologic study, a safe level of exposure should be set in terms of a method of exposure measurement which meets the following criteria in the order given: (1) The environmental factor measured should be sufficiently relevant to the disease mechanism to correlate with health status even in environments where exposures to mixed dust occur. (2) The sensitivity of the method should be such as to measure levels well below the Threshold Limit Values (TLV). (3) The method should lend itself to an appropriate sampling strategy; e.g., long-period personal samples in the case of asbestos. (4) The expense of conversion from existing methods should be reasonable. The impinger method of measuring asbestos exposure does not meet any of the criteria well with the exception of expense. Weight methods would be preferred if there were an analytical breakthrough. At present fiber counts on membrane filters are the best method of estimating exposure as related to the risk of asbestosis and the airborne fiber concentration as a factor in the risk of lung cancer. There are 9 references.

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CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	5/68	450	NFC	752

AUTHOR: Ashcroft, T.

TITLE: Asbestos Bodies in Routine Necropsies on Tyneside.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Brit. Med. J.	1	614-7	Mar. 9, 1968	JAMA	204	203	Apr. 8, 1968

ABSTRACT:

Smears prepared from an incision in the base of the right lung in a series of 311 routine necropsies in patients over 15 years of age were examined microscopically for asbestos bodies. In cases giving a positive smear 6μ-histological sections of lung were also examined. The occupational history was obtained by questionnaire or by interviewing the relatives. Asbestos bodies were found in 20.3% of cases (25.5% of 196 males; 11.3% of 115 females). Histological sections of lung revealed bodies in less than half of the cases examined. Minimal asbestosis was found in patients dying from gastrointestinal or lung carcinoma. Positive smears were more common in patients from urban areas. Where information was available, definite, or probably occupational exposure of asbestos occurred in over half the cases with positive smears. A significantly higher incidence of bodies was found in histological sections of lung from 23 cases of diffuse mesothelioma of pleura or peritoneum than in the series of routine cases.

-- J. Am. Med. Assn. References & Reviews

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CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	3/69	214	NFC	752

AUTHOR: A. Polliack and M. I. Sacks

TITLE: Prevalence of Asbestos Bodies in Basal Lung Smears

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Israel J. Med. Sci. (Jerusalem)	4	223-6	Mar.-Apr. 1968	APCA Absts.	14	25	Oct. '68

ABSTRACT:

Asbestos bodies were found in basal lung smears in 26 of 100 consecutive adult autopsies in Jerusalem. They were present in 29.1% of males and 22.2% of females, and were more frequently encountered in Ashkenazi than in non-Ashkenazi Jews. Asbestos bodies, when present, were usually scanty (less than 10), and in only two males were more than 30 bodies found under low power. The five subjects with more than ten asbestos bodies each were all Ashkenazi Jews. The prevalence of asbestos bodies is compared with Cape Town, Pittsburgh, Miami, Montreal, Glasgow, and Jerusalem. Highest frequency found is in Montreal (48%) and may reflect differences in the degree of atmospheric pollution. --APCA Absts.

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CLASSIFIED SUBJECT: 6/68 | 6 4 7 | FELLOWSHIP NUMBER: FC | FILE NUMBER: 752

AUTHOR: Leathart, G. L.

TITLE: Pulmonary Function Tests in Asbestos Workers.

ORIG. REFS.: Trans. Soc. Occ. Med. 18, 49-55 (April., 1968.) | VOL. | PP. | DATE | ABSTR. REFS.: | VOL. | PP. | DATE

ABSTRACT:

There are three ways in which pulmonary function tests may contribute to the management of workers exposed to asbestos; they may be used to confirm a diagnosis of asbestosis, to follow the progress of the disease, or to monitor unaffected workers at risk. The object of this paper is to consider how successfully these three parts are played. The typical physiological abnormalities are described, serial studies in cases of asbestosis are presented, and tentative conclusions are drawn from a small prospective study of asbestos workers who were free of disease when first seen. The findings from this investigation are summarized as follows: (1) Established asbestosis causes a loss of diffusing capacity, vital capacity and compliance. Pleural calcification by itself does not. (2) Progressive loss of function is seldom arrested when the patient is transferred to other work and most cases deteriorate. (3) Diffusing capacity appears to be the best measurement for making an early diagnosis, but the diagnosis has been subsequently confirmed by other means in only four of the cases reported in the literature. (4) The development of crepitations at the lung bases sometimes precedes a significant drop in diffusing capacity and this may be a useful observation. (5) Finally, as a general conclusion, the function tests should not be interpreted in isolation nor be given undue respect. They should always be considered in conjunction with clinical and radiographic examination.

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d 5/68 | NFC | 753

AUTHOR: Selikoff, I.J., Hammond, E. C. and Churg, J.

TITLE: Asbestos Exposure, Smoking and Neoplasia.

ORIG. REFS:	VOL.	PP.	DATE	ABSTR. REFS:	VOL.	PP.	DATE
JAMA	204	106-12	4/8/68				

ABSTRACT:

Asbestos insulation workers, as a group, have a high risk of dying of bronchogenic carcinoma (about seven or eight times expected). We have observed 370 such workmen from January 1, 1963 to April 30, 1967. Our findings indicate that asbestos exposure alone is not the entire explanation. Of 87 noncigarette smokers, none died of bronchogenic carcinoma. Of 283 workmen with a history of regular cigarette smoking, 24 died of bronchogenic carcinoma, although only three were expected to die of this disease. Calculations suggest that asbestos workers who smoke have about 92 times the risk of dying of bronchogenic carcinoma as men who neither work with asbestos nor smoke cigarettes. We conclude that asbestos exposure should be minimized, that asbestos workers who do not smoke should never start and those now smoking should stop immediately. -- Author's summary

Editor's Note: Also see Editorial pp. i-iii, this issue.

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FORM 77

MELLON INSTITUTE, PITTSBURGH, PA.

d 5/68		NFC	753

AUTHOR: Selikoff, I. J., Hammond, E. C. and Churg, J.

TITLE: Asbestos Exposure, Smoking and Neoplasia.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
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Editor's Note: Also see Editorial pp. i-iii, this issue.

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MELLON INSTITUTE, PITTSBURGH, PA.

FORM 77

AUTHOR: Seliκoff, I. J., Hammond, E. C. and Churg, J.

TITLE: Asbestos Exposure, Smoking and Neoplasia.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
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Editor's Note: Also see Editorial pp. i-iii, this issue.

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DATE EXAMINED: BY: PURPOSE OF SEARCH: CONT'D.

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MELLON INSTITUTE, PITTSBURGH, PA.

FORM 77

9/68		NUMBER	fc 752

AUTHOR J. L. Balzer and W. C. Cooper

TITLE The Work Environment of Insulating Workers

ORIG. REFR:	VOL.	PP.	DATE	ADDTN. REFR.:	VOL.	PP.	DATE
Am. Ind. Hyg. Assn. J.	29	222-227	May-June 1968				

ABSTRACT:

With the cooperation of the asbestos workers' union and insulating contractors, a study is being made of the environmental exposures and the health of insulating workers in the western United States. Surveys have been made in a number of work situations, including small commercial building, major industrial construction and marine operations. Major emphasis has been on exposures to asbestos-containing materials, fiber glass, cork, plastics, and adhesives. Trends in product usage are presented, as well as illustrative dust counts, based on membrane filter and impinger samples, for various components of the insulator's job, e.g., prefabrication, application, finishing, mixing and tearing out of old insulation.

--Authors' abst.

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MELLON INSTITUTE, PITTSBURGH, PA.

FORM 77 10 4-6

CLASSIFIED SUBJECT: 9/68

FELLOWSHIP NUMBER: fc

FILE NUMBER: 752

AUTHOR: L. Noro

TITLE: Occupational and "Non-Occupational" asbestosis in Finland. Yant Memorial Lecture.

ORIG. REFS	VOL.	PP.	DATE	ABSTR. REFS	VOL.	PP.	DATE
Am. Ind. Hyg. Assn. J.	29	195-201	May-June, 1968				

ABSTRACT

In summary of the Finnish experiences concerning asbestos, we feel that: (1) Asbestos is a rather dangerous material to workers' health, just as hundreds of other agents are if they are not properly controlled in industrial use. We, however, are at present able to control it and make the use of it as harmless as the use of other dusts or toxic materials, even radioactive substances, might be. Every occupation has its health hazards, so also does the asbestos industry; as a part of the total health of workers, asbestosis can be reduced by modern industrial hygiene to a very small hazard. (2) We cannot agree with the recent "horror propaganda" such as was written in the London Sunday Times by Dr. Byrne that asbestos is, "Capable of killing not only the exposed workman but also perhaps his womenfolk and even people living near his place of work." If so, the population in the asbestos area of Finland would already be dead and nobody could live there. Still at present in the asbestos area the mortality rate from cancer and other malignancies is equal to the other rural areas of the country, although in the worker population the frequency of lung cancer might be somewhat higher. (3) As industrial hygienists we, however, have to continue our work to reach better and better hygienic conditions and dust control in places of employment as well as in the environment of factories and mines to safeguard the workers and general population.

--Author's summary cond.

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PURPOSE OF SEARCH:

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FORM 77

MELLON INSTITUTE, PITTSBURGH, PA.

8/68 / NFC 752

AUTHOR: M. Viikeri, J. Jaaskelainen, and E. Tahti

TITLE: Ultrasonic Examination of Pleural Thickening and Calcifications in Occupational Asbestosis

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Diseases of Chest	54	7-20	July, 1968				

ABSTRACT:

The roentgenologic diagnosis of occupational asbestosis is based upon typical pulmonary fibrosis and anteriorly detected pleural calcifications, which appear much later than parenchymal changes. Therefore, a definite diagnosis usually demands a long observation period. We used ultrasonic A- and B-mode methods to examine pleural changes in nine occupational asbestosis patients and five normal persons. In normal persons the parietal pleura was shown as a thin, sharp line when the B-mode method of examination was used. Roentgenographically observed calcifications were easily detected and distinguished from the normal pleura by this examination. It is noteworthy and similar echo peaks were seen in A-mode examinations in lateral and posterior pleura, where roentgenograms did not reveal pleural calcifications, and their size could be traced well with the B-mode examination. Thus it is possible to find early pleural changes, which, in our opinion, are connected with occupational asbestosis. Diagnosis could be made earlier without a long observation time. There are 8 references. --Authors' abst.

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MELLON INSTITUTE, PITTSBURGH, PA.

FORM 77 10M 4-67

8/68 | | NFC | 753

AUTHOR: I. J. Selikoff and J. Churg

TITLE: Lung Cancer Among Asbestos Insulation Workers.

ORIG. REPT.	VOL.	PP.	DATE	ABSTR. REPT.	VOL.	PP.	DATE
Am. Rev. Resp. Dis.	98	149	July, 1968				

ABSTRACT:

Clinical epidemiologic and pathologic findings in a large series of bronchogenic carcinomas were reported among asbestos workers. Among 632 asbestos insulation workers, followed prospectively from January 1, 1943, to December 31, 1967, there have been 358 deaths. Seventy-two were due to cancer of the lung or pleura, approximately eight times the expected incidence. Epidemiologic data are reviewed, including such factors as lapsed period from onset of exposure, total exposure, relation to smoking habits, and comparative incidence of bronchogenic carcinoma and pleural mesothelioma. A personal series of more than 35 cases, the largest so recorded, is analyzed with regard to such clinical and pathologic characteristics as lower lobe localization, variable cell type, peripheral location including infrequency of abnormal bronchoscopic findings, relation to severity of asbestosis, frequency of pleural involvement, diagnostic pitfalls, et cetera.

--Authors' abst.

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MELLON INSTITUTE, PITTSBURGH, PA.

FORM 77

| 12/68 | | NFC | 752

AUTHOR: G. Sheers and A. R. Templeton

TITLE: Effects of Asbestos in Dockyard Workers

ORIG. REFS	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Brit. Med. J.	3	574-578	9/7/68	J. Am. Med. Assn.	206	675	10/14/68

ABSTRACT:

The prevalence of pleural and pulmonary abnormalities attributed to asbestos among 15,000 workers in a naval dockyard was studied by means of a one-in-ten sample. Ninety-four percent of the men in the sample were examined. Of these, 3% had experienced continuous occupational exposure and half of the remainder had been exposed intermittently. The prevalence of pleural fibrosis ranged from 28% in continuously exposed workers to 1.9% in those with least exposure. Among intermittently exposed workers the prevalence rose to 14% after 25 years had elapsed since first exposure. Most cases of pulmonary fibrosis occurred among the small number of laggers and sprayers who had been continuously exposed for between 15 and 20 years. Pulmonary fibrosis was also seen in a variety of intermittently exposed trades and had been preceded by extensive pleural thickening in some cases. Ten cases of pleural mesothelioma have occurred in the last three years and a large number of men appear to be potentially at risk. --J. Am. Med. Assn. References & Reviews

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MELLON INSTITUTE, PITTSBURGH, PA.

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CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	11/68	107		NFG-752

AUTHOR: M. Walton and T. Skeoch

TITLE: Diagnosis of Asbestosis by Needle Lung Biopsy

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Thorax	41	556-562	Sept., 1968	J. Am. Med. Assn.	206	425	10/7/68

ABSTRACT:

A method of diagnosing asbestosis during life by needle lung biopsy using the Jack needle as originally described by Smith is presented. It is essentially a punch biopsy. Because pleural adhesions usually accompany asbestosis, pneumothorax did not occur when the needle was inserted 2 cm or less into the lung under local anesthetic. Thus, without thoracotomy adequate biopsy material was obtained to confirm the presence of pulmonary fibrosis in relation to asbestos bodies. Nine cases are described. --J. Am. Med. Assn. References & Reviews

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MELLON INSTITUTE, PITTSBURGH, PA.

FORM 77 JUN 4-64

AUTHOR: L. O. Meurman

TITLE: Pleural Fibrocalcific Plaques and Asbestos Exposure

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Environ. Research	2	30-46	Sept., 1968				

ABSTRACT:

In a number of serial investigations an association has been demonstrated between the development of benign calcific pleural plaques or malignant diffuse mesothelioma and slight inhalation of asbestos dust, often some 20 or 30 years previously. As the industrial use of asbestos has increased enormously during the last few decades, a rise in the frequency of mesothelioma—which has hitherto been rare—is anticipated in the near future (Thomson, 1962). From the standpoint of epidemiological research concerning asbestos exposure, the demonstration of calcific plaques on roentgenograms has proved a useful criterion. So far, only an association has been disclosed, however, not an obvious causal relationship. Other pathogenetic factors, still unknown, have to be taken into account either as a contributory or the sole cause. The occurrence of bilateral calcific plaques does not yet imply the presence of asbestosis-pneumoconiosis. In the majority of subjects who have not been occupationally exposed to asbestos, pleural calcification is not combined with pulmonary changes or signs of pneumoconiosis. There are 48 references.

--Author's abst.

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MELLON INSTITUTE, PITTSBURGH, PA.

FORM 77 ION 444

12/68	1177	NUMBER NFC	752

AUTHOR: C. M. Nice, Jr., and D. G. Ostrolenk

TITLE: Asbestosis and Nodular Lesions of the Lung

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Diseases of Chest	54	226-233	Sept., 1968	J. Am. Med. Assn.	206	681	10/14/68

ABSTRACT:

The rarity of asbestosis and concomitant nodular lesions of the lung has resulted in disagreement regarding the association of the two conditions. The radiographs of six patients with nodular lesions of the lung in association with asbestosis prompted a review. This study confirms the presence of nodular and cystic lesions in radiographs of patients with asbestosis. Since asbestosis may be serious and the complications can be fatal, it should be considered in the differential diagnosis of patients with nodular lung lesions who have been exposed to asbestos. --J. Am. Med. Assn. References & Reviews

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MELLON INSTITUTE, PITTSBURGH, PA.

FORM 77 10M 4-64

CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	1/69	77	fc	753

AUTHOR: J. F. Knox, et al

TITLE: Mortality From Lung Cancer and Other Causes Among Workers in an Asbestos Textile Factory

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Brit. J. Ind. Med.	25	293-303	Oct., 1968				

ABST: An account is given of work in an asbestos textile factory and of the steps taken to reduce exposure to dust since the introduction of the Asbestos Industry Regulations in 1931. Measurements of the amount of dust to which men were exposed in the scheduled areas have been made by various methods since 1951, but the data obtained by these methods are not directly comparable. Measurements made since 1960 show that the mean yearly dust level has been fairly constant from year to year and has varied from place to place between 1 and 8 particles (5 to 100 microns long and at least three times as long as they were wide) per c.c. of air. Chrysotile was used predominantly in the factory, but small amounts of crocidolite were also processed at all relevant periods. Death rates have been recorded for all the 256 men who were employed for at least 20 years in the scheduled areas since the first man completed 20 years' exposure in 1916, and for the 538 men and 220 women who were employed for at least 10 years in the scheduled areas but were never employed in these areas before 1933. The results show a substantially increased mortality for men who were exposed for 10 or more years before 1933 (48 deaths from all causes against 17·1 expected). The increased mortality among these men can be accounted for by an increased mortality from cancer of the lung (12 deaths against 1·2 expected) and from diseases of the respiratory and circulatory systems associated with asbestosis. Men employed before 1933, but for less than 10 years, showed an increased mortality

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10M 4-64

FORM 77

from lung cancer (5 deaths against 2·6 expected), but no significant increase from other causes. Men and women who were exposed only since January 1, 1933, have had a mortality experience close to the national average. Analysis of the trends in mortality shows (1) a decrease in mortality from lung cancer and other deaths associated with asbestosis with reduction in length of employment before 1933, and (2) an increase in mortality from lung cancer and other deaths without asbestosis with age. Twenty-three cases of lung cancer occurred in men who had been employed in the scheduled areas for at least 20 years. One was regarded as a pleural mesothelioma and the rest (approximately 18 in excess of expected) appear to have been ordinary bronchial carcinomas. Four other mesotheliomas have been diagnosed since 1963, all in men and women with less than 10 years' exposure, one with only seven months' exposure, and one in a man who had been employed in the scheduled areas only since 1937. The results provide grounds for believing that the occupational hazard of bronchial carcinoma has been largely eliminated, but the data are insufficient to estimate the extent of the risk which may remain.

--Authors' abst.

CLASSIFIED SUBJECT			NUMBER	
	3/69	213	NFC	752

AUTHOR: R. H. Mortimer and C. B. Campbell

TITLE: Asbestos Exposure and Pleural Mesotheliomas

ORIG. REFR.:	VOL.	PP.	DATE	ABSTR. REFR.:	VOL.	PP.	DATE
Med. J. Australia	2	720-22	Oct. 26, 1968	J. Am. Med. Assn.	206	2371	12/2/68

ABSTRACT:

Diffuse pleural mesothelioma is reported in two patients exposed to asbestos dust. The neoplasmas were dissimilar in macroscopic and histological appearances. Criteria for classification as mesotheliomas are presented. Asbestos bodies were found in the lungs of both patients, but minimal interstitial fibrosis was present.

--J. Am. Med. Assn. References & Reviews

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10M 4-64

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CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	5/69	474	FC	752

AUTHOR: L. J. Cralley, et al

TITLE: Characterization and Solubility of Metals Associated with Asbestos Fibers

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Am. Ind. Hyg. Assn. J.	29	569-73	Nov.-Dec 1968				

ABSTRACT:

A series of uniform samples representing blends from different sources and types of asbestos were analyzed for nickel, chromium, cobalt and manganese. The bulk samples and the less than 10-micron size fractions were analyzed separately. The metals soluble in bovine serum were determined for the less than 10-micron fractions. Free silica content was also determined. The degree of solubility of the same metal varied considerably by source and type of asbestos. Chrysotile had greater amounts of nickel and chromium whereas Amosite was higher in manganese. Crocidolite had the lowest metal content. There are 4 references. --Authors' abst.

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MELLON INSTITUTE, PITTSBURGH, PA.

FORM 77 10M 4-

2/69 | / | NUMBER nfc 752

AUTHOR: J. R. Lynch

TITLE: Brake Lining Decomposition Products

ORIG. REVS	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
J. Air Poll. Control Assn.	18	824-26	Dec. 1968				

ABSTRACT:

A number of investigators have found asbestos bodies in the lungs of urban residents who were not occupationally exposed to asbestos. A relationship between the carcinogenic properties of asbestos and the urban excess of lung cancer has been suggested. The decomposition products of brake linings have been described as a possible source of these fibers. Brake testing laboratory methods were used to test fiber emission from a variety of friction products. Only a very small fraction of the asbestos escaped as free fiber while the remainder was transformed into some other, nonfibrous, mineral. A significant release of free fiber occurred only under conditions extreme enough to produce brake failure. There are 12 references.

--Author's abst.

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MELLON INSTITUTE, PITTSBURGH, PA.

CLASSIFIED SUBJECT			NUMBER
	3/69	24	NFC 752

AUTHOR: I. Hagerstrand, L. Meurman, and B. Odlund

TITLE: Asbestos Bodies in the Lungs and Mesothelioma. A Retrospective Examination of a Ten-Year-Autopsy Material.

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Acta Pathol. Microbiol. Scand. (Copenhagen)	72	(2), 177-91	1968	APCA Absts.	14	23	Oct. '68

ABSTRACT:

In 12,763 autopsies performed during 1957-66 at the General Hospital, Mälmo, Sweden, 35 cases of mesothelioma were found (27 of the pleura, 8 of the peritoneum) for a frequency of 0.27% (0.3% if children under 15 years of age are excluded). Of these, 34 were re-examined for the presence of asbestos bodies in the lungs and data compared with data from a matched control group. Asbestos bodies were found in 15 of 26 cases of pleural mesothelioma; a few bodies were found in most cases, but bodies were numerous (more than 20, about 70 μ long) in four. No cases showed pulmonary fibrosis. In the controls, asbestos bodies were found in ten cases, but never in large numbers. Asbestos bodies were found in three of the eight cases of peritoneal mesothelioma; in two, bodies were numerous. Only one of the controls had many asbestos bodies. Of the 15 cases suspected of asbestosis, only one showed advanced pulmonary fibrosis and numerous asbestos bodies. --APCA Absts.

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CLASSIFIED SUBJECT			PERSONAL NUMBER	
	1/70	85		752

AUTHOR: T. F. B. Collins

TITLE: Pleural Reaction Associated with Asbestos Exposure

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Brit. J. Radiol.	41 (489)	655-661	1968	Carcinogenesis Absts	7	113	March, 1969

ABSTRACT:

Routine miniature radiography of 552 men, working under "favorable" conditions in an asbestos-cement factory in Durban, showed obvious pleural reactions in 11/552 (2%), while the incidence among workers not handling asbestos was 0.3-0.6%. These 11 pts. and 4 others are described; all were African males, had worked in the industry 2-5 years and all except 2 had no overt symptoms. One pt. had a probable old tuberculous lesion and another had possible tuberculosis. Asbestos bodies in the sputum, clubbing and a positive Heaf tuberculin reaction (II-IV) were present in 8/15, 9/15 and 15/15, resp. It is suggested that the observed pleural lesions are the first signs of disease induced by light exposure to asbestos over a relatively short time. The "acute" (with visible parenchymal disease) and "chronic" (usually symptomless, with dense soft tissue plaques without apparent calcification) asbestosis, corresponding to sustained heavy exposure or light and/or intermittent exposure, are described and illustrated.

--Carcinogenesis Absts.

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MELLON INSTITUTE, PITTSBURGH, PA.

FORM 77 JM 4-64

AUTHOR H. T. Planteydt

TITLE Mesotheliomes and Asbestos Bodies in the expectoration of workers at Chantrer Naval

ORIG. REFS	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Le Poumon Coeur	24	545-548	1968				

ABSTRACT

Mesotheliomes and Asbestos Bodies in the Expectoration of Workers at Chantrer Naval. H. T. Planteydt. Le Poumon Coeur 24: 545-548, 1968

The sputa of 160 shipyard workers were examined for asbestos bodies and in 61% of them the findings were positive. The percentages among production workers ranged from 55 to 88. Two of 17 administrative employees (9%) also had asbestos bodies in their sputum. Within 5 years 19 cases of mesothelioma were found in a community of 300,000 inhabitants which contained 10 hospitals. Of the 19, 17 were shipyard workers but none had worked with asbestos. Eleven were autopsied. Asbestos bodies were found in the lungs of all 11 but none had pneumoconiosis or fibrosis of the lungs. The author states "It was not confirmed that the substance at the center of the asbestos' bodies was always asbestos". --P. G.

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MELLON INSTITUTE, PITTSBURGH, PA.
FORM 77 10M 4-6

CLASSIFIED SUBJECT		FELLOWSHIP NUMBER	FILE NUMBER
3/69		NFC	752

AUTHOR E. A. Gaensler and W. W. Addington

TITLE: Asbestos or Ferruginous Bodies

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
New Engl. J. Med.	280	488-492	Feb. 27,	1969			

ABSTRACT:

Diatomaceous earth, graphite and carborundum have been identified as the core of typical "asbestos bodies" in man. Substances believed to be biologically inert, including fibrous aluminum silicate, fibrous glass, silicon carbide and forsterite have caused ferruginous bodies in hamsters and guinea pigs. Even fragments of the lung's own elastic tissue may produce "elastosis bodies" that look similar. Technics are now available for analysis of the core fibers. They include electron beam and x-ray diffraction, laser microprobes, ultrasonic disintegration and mass spectroscopy. The electron-beam diffraction patterns of ferruginous bodies from 22 lungs of "unexposed" persons did not coincide with that of chrysotile. Since 95 per cent of asbestos used in the United States is of this type, it was concluded that the vast majority of ferruginous bodies found at random autopsies are not from asbestos. Obviously, the diagnosis of asbestosis, based on the finding of ferruginous bodies in an apparently unexposed person, must be made with caution. However, one must be equally cautious in making a diagnosis of "nonspecific interstitial pneumonitis" in a person with known exposure because there is no relation between the number of bodies and the severity of asbestos pneumoconiosis. On the contrary, we and others have noted an inverse relation. In persons with prolonged but distant exposure, often retired because of respiratory impairment, the lungs frequently show severe fibrosis with only rare asbestos bodies whereas in patients with more recent exposure, lung biopsy reveals alveoli filled with bodies and debris-laden macrophages but little or no fibrosis.

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This paradox can be explained in a number of ways. The small number of asbestos bodies in workers with fibrosis who were exposed long ago may be the result of clearing of the intra-alveolar material. This clearing occurs most rapidly in areas of supple alveolar walls whereas it is delayed in the more noncompliant regions near the thickened pleura and around larger vessels and bronchi. Therefore, the distribution of asbestos bodies is uneven, and their number in any section need not be representative. The relation between the number of visible asbestos bodies and the degree of fibrosis is also poor because only a very small and variable fraction of fibers become coated. Probably the tiniest, uncoated particles, which are invisible by light microscopy, are most fibrogenic because they have the largest aggregate surface area. This is important because at some stage a chemical reaction must initiate the process of fibrosis. The visible asbestos bodies, therefore, are best considered as markers, rather than as important causative agents. In 1929 W. E. Cooke[1] said that "curious bodies have been found in every necropsy in pulmonary asbestosis, and the problems we have to decide are, first, what the bodies are, and second, whether they are diagnostic of asbestosis." Although at first answers seemed deceptively simple, new information increasingly has raised new questions. That asbestos bodies may contain asbestos is clear. It is equally clear that structures apparently indistinguishable from asbestos bodies may have as their core other materials. Unfortunately, the methods of identification are exceedingly complex, and, even in the best hands, results remain tentative. Nevertheless, recent animal exposure and analytical work suggests that, until asbestos has been identified as the core of an "asbestos body," it is best to use the more general term "ferruginous body." There are 27 references. --Cond. from text

1. Fibrosis of lungs due to inhalation of asbestos dust. Brit. M. J. 2:147, 1924

11/69 / NFC 752

AUTHOR: S. Speil and J. P. Leineweber

TITLE: Asbestos Minerals in Modern Technology

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Environ. Research	2	166-203	4/69				

ABSTRACT:

Asbestos is a generic term for a variety of hydrated silicate minerals which have one common attribute, namely, the ability to be separated into relatively soft, silky fibers. Although the name is ordinarily associated with those varieties which have technologic importance, it is applicable to all minerals which fit the above description. The term "asbestiform minerals" is perhaps most descriptive. The known varieties of asbestiform minerals can be divided into two main classes on the basis of their crystal structures: serpentine and amphiboles. The sole member of the serpentine class is chrysotile asbestos, which is by far the most common of the asbestiform minerals. It accounts for more than 95% of the asbestos fiber produced today. There are five recognized asbestiform varieties of amphibole: crocidolite, amosite, anthophyllite, tremolite, and actinolite. Although the amphiboles are common rock-forming min-

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erals, the asbestiform varieties are much less abundant than chrysotile. The physical and chemical properties of the asbestiform minerals can be directly related to their crystal structure and chemical composition. In turn, the physical and chemical properties are responsible for the commercial importance of asbestos. It is understandable, therefore, that great emphasis has been placed on the elucidation of the structure and composition of these important minerals. Several comprehensive reviews on the asbestiform minerals have been published in recent years, including N. W. Hendry, R. Gaze, A. A. Hodgson, and W. A. Deer, R. A. Howie, and J. Zussman. The objective of this paper is to bring this information up to date with particular emphasis on recent developments concerning the physics and chemistry of the asbestiform minerals. In addition, the uses of asbestos will be discussed briefly in relation to the properties of the individual species. There are 86 references. --Authors' abst.

CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	9/69	935	FC	753

AUTHOR: M. F. Stanton, R. Blackwell, and Eliza Miller

TITLE: Experimental Pulmonary Carcinogenesis with Asbestos

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Am. Ind. Hyg. Assn. J.	30	236-44	May-June, 1969				

ABSTRACT:

Three methods have been used to test the carcinogenic response of the lung and pleura of the rat to asbestos. No carcinogenic response of pulmonary epithelium or pleura was noted to either healing infarcts or implanted wax pellets that contained asbestos. Sarcomas of the pleura and pericardium developed in 74% of rats in which the pleura was covered with an asbestos-impregnated fibrous glass coat. The fibrous glass alone caused only slight reaction, with complete healing. The last method may serve as an accurate and convenient means of quantitating the neoplastic response of the pleura to asbestos. There are 21 references. --Authors' abst.

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CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	11/69	11 2 8	FC	752

AUTHOR: P. Gross, R. T. P. deTreville, and M. N. Haller

TITLE: Pulmonary Ferruginous Bodies in City Dwellers. A Study of Their Central Fiber.

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Arch. Environmental Health	19	186-88	8/69				

ABSTRACT:

Chrysotile, which comprises more than 90% of the asbestos used in this country, has a characteristic electron diffraction pattern because of its unique, hollow, tubular, crystalline structure, as seen under the electron microscope. On the basis of the electron diffraction pattern, chrysotile was decisively excluded as a constituent of the cores of all 28 ferruginous bodies isolated from lungs of urban dwellers not occupationally exposed to asbestos. This exclusion is considered highly significant because if the ferruginous bodies in the above city dwellers had been caused by the inhalation of asbestos dusts, then some of the cores should logically be composed of chrysotile. There are 9 references.

--Authors' abst.

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MELLON INSTITUTE, PITTSBURGH, PA.

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1/70 / / 752

AUTHOR: M. Kleinfeld

TITLE: Asbestos and Neoplasia

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Industrial Hygiene Review	11	3-10	June, 1969				

ABSTRACT:

Asbestos bodies or mineral-fibre bodies have been discovered in random necropsies of urban populations. The frequency in various cities is as follows: Montreal, 48%; Pittsburgh, 41%, Miami, 27.2%; Capetown, 26.4% and London, 24.3%. Because of the increased frequency of malignant disease in asbestos workers, it has been suggested but not established that the presence of small amounts of asbestos dust in the atmosphere may constitute a public health hazard. The author has pointed out that in none of the necropsy studies where correlations were attempted with diagnosis was there any apparent association with malignancies or other specific causes of death. Furthermore, there is ample evidence that so-called asbestos bodies can be found in workers with exposures to minerals other than asbestos, such as graphite, soft coal and diatomaceous earth, which points up the urgent need for positive identification of the mineral fibres that are responsible for producing the asbestos bodies seen. Hence, it is unwarrented to draw the conclusion from what is now known that the asbestos bodies necessarily presage a significant rise in the incidence of neoplasms. There are 9 references.

--Author's abst.

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MELLON INSTITUTE, PITTSBURGH, PA.

CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	
10/69	1/1/1		NFC	752

AUTHOR: T. E. Dicke and B. Naylor

TITLE: Prevalence of "Asbestos" Bodies in Human Lungs at Necropsy

ORIG. REFS.:	VOL.	PP.	DATE	ABBR. REFS.:	VOL.	PP.	DATE
Diseases of Chest	56	22-25	8/69				

ABSTRACT:

Scrapings and sections of lungs and hilar lymph nodes from 100 necropsies of residents of the state of Michigan were examined for "asbestos" bodies. Lungs from 18 cases, and hilar lymph nodes from four cases yielded positive findings. In one case in which the lung scrapings were negative, the scrapings of hilar lymph node were positive. In only four of the 19 positive cases were "asbestos" bodies seen in the sections of lung tissue. The lung scrape technique achieves maximum positive results in the detection of "asbestos" bodies when upper and lower lobes of both lungs are scraped. Upper and lower lobes of lungs can be expected to yield about the same number of "asbestos" bodies. None of the subjects had manifested pulmonary asbestosis during life. Their occupational and environmental histories were quite varied; in general, they did not point to a history of exposure to asbestos. There are 12 references. --Authors' abst.

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CLASSIFIED SUBJECT: 1/70 | NUMBER: 752

AUTHOR: G. W. Gibbs

TITLE: Some Problems Associated with the Storage of Asbestos in Polyethylene Bags

ORIG. REF'S:	VOL.	PP.	DATE	ABBR. REF'S:	VOL.	PP.	DATE
Am. Ind. Hyg. Assn. J.	30	458-464	Sept.-Oct. 1969				

ABSTRACT:

Samples of milled Canadian chrysotile asbestos, collected and stored in polyethylene bags, were found on extraction with benzene to yield oils in substantially greater quantity and with at least one different constituent from those collected and stored in glass jars. The constituent isolated from the asbestos collected in certain polyethylene bags is yellow and shows a strong absorption band at 421 mμ. Extracts of polyethylene bags do not contain this compound, but the compound is formed on the introduction of asbestos into the bag. The relevance to sample collection for subsequent organic analysis and to animal experiments for tests of carcinogenic activity of samples of asbestos and other substances is discussed. There are 12 references. --Author's abst.

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Fibrosis observed was multifocal, centered in the proximal portion of primary lobules with normal appearing tissue intervening. Cancer production with crysotile in this study appears to involve trace metals introduced during hammer milling which increased nickel, chrome, and cobalt. Previous investigators have not reported subjecting their dusts to hammer milling. The increase in content of trace metals after milling was as follows: nickel, 82%; cobalt, 145%; chrome, 34%. Analysis of the worn hammer of the hammer mill revealed a nickel content of 2,339µg/gm of sample. This finding, if validated by further studies, should provide an important aid to guide industrial hygiene controls of potential health hazards. There are 13 references.

1/70			752

AUTHOR: J. Milne

TITLE: Fifteen Cases of Pleural Mesothelioma Associated with Occupational Exposure to Asbestos in Victoria

ORIG. REFS:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Med. J. Australia	2	669-673	Oct. 4, 1969				

ABSTRACT:

Fifteen cases of pleural mesothelioma occurring in Victoria are described. Occupational histories and the finding of asbestos bodies in lung tissue indicate a relationship between occupational exposure to asbestos and induction of pleural mesothelioma many years later. The exposure in some cases was relatively short but intense. Crocidolite or blue asbestos would seem to be particularly potent in the induction of these tumors. There are 16 references.
--Author's abst.

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FORM 77

	2/70	241		752

AUTHOR: M. L. Newhouse

TITLE: A Study of the Mortality of Workers in an Asbestos Factory

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REF'S.	VOL.	PP.	DATE
Brit. J. Industr. Med.	26	294-301	Oct. 1969				

ABSTRACT:

A cohort study of over 4,500 male workers employed at an asbestos factory making both textiles and insulation materials is described. The main analysis is of the mortality of workers employed between April 1, 1933, the date of the implementation of the Asbestos Regulations, and May 1, 1964. The analysis was made in relation to job, length of exposure, and length of follow-up after first exposure. There was no significant difference between the number of deaths occurring in the factory population and the national figures, until an interval of 16 years or longer had elapsed from first exposure in the factory. There were 1,160 men who fulfilled this criterion. In this group there was no excess mortality among those who worked in jobs where exposure was low or moderate, but among those with jobs which entailed heavy exposure there was a significant excess of deaths from cancer of the lung and pleura, and cancer of other sites, in men with a total period of employment in the factory of less than two years, as well as with those who worked for longer. Excess mortality from respiratory disease was observed only among severely exposed workers with long service. --Author's abst.

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FORM 79-1

	12/69	12.93	FELLOWSHIP NUMBER: NFC	FILE NUMBER: 752

AUTHOR: G. W. Wright

TITLE: Asbestos and Health in 1969

ORIG. REFR.:	VOL.	PP.	DATE	ABSTR. REFR.:	VOL.	PP.	DATE
Am. Rev. Resp. Dis.	100	467-47?	10/69				

ABSTRACT:

The relationship between asbestos and health of humans, as reviewable in 1969, indicates that serious exposures to asbestos fiber can occur in certain occupational and immediately adjacent environments. Fortunately, the concentration of asbestos fibers in these settings can be controlled. The environment of the insulation workers is more difficult to control than the more fixed and permanent environment of the factory and associated neighborhood. An approximation of the concentration of respirable-sized asbestos fiber that can be tolerated without the risk of pulmonary fibrosis has been achieved. There is reason to believe that this concentration will also minimize the risk of pulmonary malignancy including mesothelioma. Because of the long time lapse associated with the development of malignancy, longer periods of observation are desirable for a final decision on this point. There is reason to believe that the occupational use of asbestos fiber can achieve the same degree of safety as the use of explosives, radiation, and beryllium, although extensive alterations may be required in the control of production and manufacturing, the containment of asbestos fiber so that none escapes to the outside, and the proper disposal of solid wastes containing the fiber.

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The risk to the general public posed by the mostly intermittent exposure to the low concentrations of asbestos likely to be present in the ambient air has been exaggerated beyond the limits imposed by known facts. *Research* to develop the necessary additional information upon which appropriate and realistic measures for safe use of asbestos fiber can be taken should be the goal in the next few years. --Cond. from text

CLASSIFIED SUBJECT: 3/70

FELLOWSHIP NUMBER:

FILE NUMBER: 752

AUTHOR: E. O. Longley

TITLE: The Many Faces of Asbestos Disease

ORIG. REF'S	VOL.	PP.	DATE	ABSTR. REF'S.	VOL.	PP.	DATE
Med. J. Australia	2	1063-1066	Nov. 22, 1969				

ABSTRACT:

Asbestosis is seen as one of the most significant medical problems deriving from industry in the present age. As not only asbestosis but also carcinoma of the lung and mesothelioma of the lung are accepted by the New South Wales Workers' Compensation (Dust Diseases) Board as compensable injuries provided that adequate industrial exposure to asbestos can be proven, it is important that all physicians should be acquainted with the three conditions and should, when they see conditions resembling carcinoma or mesothelioma of the lung, be alerted to make the fullest possible inquiries into the patient's industrial background and place of residence. The presence of asbestos bodies in the sputum or in the lung tissue indicates only that the patient has been industrially or environmentally exposed to asbestos, and not that the patient has pulmonary asbestosis. --Author's abst.

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FORM 77 REV. 10M 4-64

10/70	1159	NUMBER	752

AUTHOR: H. Otto and J. G. v. Fragstein

TITLE: ~~Zur Häufigkeit von Asbestnadeln in menschlichen Lungen~~ (German).
Occurrence of Asbestos Needles in Human Lungs.

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Int. Arch. Gewerbepath. Gewerbehyg.	25	193-201	1969				

The present paper deals with the examination by phase contrast microscopy of 218 samples of dust isolated from human lungs from individuals both exposed and not exposed to dust through their occupation. In all lungs of persons not occupationally exposed, needle-shaped particles up to 50 μ length could be demonstrated. Among 190 lungs of persons occupationally exposed to dust, most of them employed in ceramics industry, 14 contained no needle-shaped particles at all, or only particles below 10 μ in length, resp. These dusts were nevertheless collected from lungs of serious cases of silicosis, the nature and quantity of dust deposited in these lungs thus being determined by their occupational exposure. In contrast to the single although regular occurrence of needle-shaped particles in normal and silicotic lungs, the dust deposits in the lungs of persons exposed to asbestos contained many or even abundant needleshaped particle. However, a similarity with the asbest-bodies of histological sections becomes obvious only when these needles are longer than 20 μ. The difference in the proportion of needleshaped particles in the lung dust collected from individuals exposed and not exposed to asbestos is of diagnostic value. --Authors' summary

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FORM 7-

CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	4/70	4/5.3		752

AUTHOR: M. V. Klin et al

TITLE: The influence of asbestos dust on the health of workers

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Arbeitsmedsozialmed arbeitshyg	4/5	87-88	4/3/69	Excerpta Med	22	511	12/69

ABSTRACT:

In 400 workers, an increase of subjective symptoms progressive with the duration of exposure was observed with dyspnea and dry cough being the predominant symptoms. Laboratory examinations revealed an uncharacteristic increase of the BSR and, in the cases of asbestosis, an increase of the γ globulins. In the group examined, pulmonary asbestosis was diagnosed 15 times; these patients had been exposed for an average period of 9.9 yr. This duration of exposure is shorter than that reported by other authors. One case was complicated by a bronchial carcinoma, another by pulmonary tb. Bronchographic and bronchoscopic examinations revealed the image of incapacitating bronchitis. The incidence of pulmonary tb observed in this group exposed to asbestos dust was precisely the same as that observed by other authors; no causative relation between asbestosis and tuberculosis was manifest. --Excerpta Med. Abstracts

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MELLON INSTITUTE, PITTSBURGH, PA.

	4/70		FELLOWSHIP NUMBER	FILE NUMBER 752

AUTHOR: J. Stumphius

AUTHOR'S POSITION AND ADDRESS: Available from: Van Gorcum &Co. N. V. Assen, The Netherlands

TITLE: Asbest In Een Bedrijfsbevolking(Asbestos in an industrial population)

PUB. DESIGNATION AND SERIAL NO.: | REVIEWED IN: | VOL. | PP. | DATE

PLACE PUBLISHED AND PUBLISHER:

EDITION: | DATE: 1969 | VOL.: | LIST PRICE: Not given

PAGES: 280 | GRAPHS: | GENERAL: | THEORETICAL: | ECONOMIC: | EXCELLENT:

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This book, 280 pages with nine plates, written in Dutch, but with a nine-page English summary, is divided into two parts. The first part, consisting of seven chapters totaling 120 pages, is a review of the literature inclusive of papers published in 1968. It discusses in some detail the more significant publications dealing with the biological effects of asbestos, often tabulating the data. The definition of asbestos, the description of the different varieties, their chemical composition, the applications in which they are used, and the tonnages mined (1963) are followed by chapters on asbestosis, the relation of asbestos to different types of cancers, to mesothelioma, and to pleural plaques. One chapter is devoted to the relationship of iron to neoplasia. The second part, divided into six chapters, is concerned with the author's investigation of the working population in the Royal Scheide Shipyards and Engineering Works in Flushing, involving 3,100 people. Of a total of 25 cases of mesothelioma diagnosed during 1962-1968, in and around Flushing, 22 had been connected with the shipyard. However, much of the investigation revolved around asbestos bodies in the sputum of the employees, the method for demonstrating them, the distribution of the workers with positive sputa, and the relation of the asbestos bodies to asbestos dust exposure, as well as to iron oxide. Some of the asbestos bodies (how many is not stated) were stripped of their ferruginous coating and subjected to microprobe analysis. The central cores were found to consist of amphibole asbestos. The author makes the following noteworthy statement in the summary (page 233): "In view of the present wide dissemination of asbestos, particularly outside industry, we must fear that entire

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populations will soon be subjected to the same sort of slight exposure. The results will then become apparent a few dozen years from now. From a problem associated with industrial medicine, asbestos is rapidly developing into one affecting our national health." A somewhat similar statement appears on the dust cover of the book. These somber warnings are apparently based on one fact and one assumption. The fact is that adults in urban populations generally have large numbers of ferruginous bodies indistinguishable from asbestos bodies in their lungs; whereas the assumption is that these bodies have an asbestos fiber as their central core. Another intriguing concept discussed in this book is the relationship of iron to the development of both neoplasia and asbestos bodies. Although it is admitted that iron is an essential component of hemoglobin and that workers with siderosis do not run an excessive risk of developing lung cancer, nevertheless, there is iron in crocidolite which is associated with the development of mesothelioma: Iron is also associated with the formation of asbestos bodies, and iron oxide in combination with benzo α pyrene has been used sucessfully in the experimental production of lung cancer. Therefore, according to the author, iron may be considered a co-carcinogen. An interesting observation made by Dr. Stumphius and illustrated in Plate 9, is that a patient with mesothelioma may have a posture which slants to the affected side. This book is recommended for those who can read Dutch and who want a fairly comprehensive review of the recent literature on asbestos dust as an occupational hazard. --P. G,

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AUTHOR: J. Bignon, et al.

TITLE: Method for the Isolation and the Concentration of Ferruginous bodies of Human Lungs, Their Frequency and their Significance.

ORIG. REF'S	VOL.	PP.	DATE	ABSTR. REF'S	VOL.	PP.	DATE
J. Francais de Med. Chir. Thor.	24	71-86	Jan. 1970				

ABSTRACT:

The frequence of ferruginous bodies with transparent axial fiber or without axial visible fiber was studied in 45 lungs from the post-mortem or the surgical theater. The technique of concentration allows for a quantitative approach. The ferrous bodies were found in 97,8 % of the subjects, aged 17 to 77. The proportion was the same in both sexes. The series contained 3 pleural mesotheliomas and 14 broncho-pulmonary cancers; 2 mesotheliomas and 6 cancers had an excess of ferrous bodies.
--Authors' summary

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CLASSIFIED SUBJECT			ACCESSION NUMBER	FILE NUMBER
	2/71	1		752

AUTHOR: S. A. Roach

TITLE: Hygiene Standards for Asbestos.

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Ann. Occ. Hyg.	13	7	Jan. 1970	Med. Bull.(St.Oil N.J.)	30	318	Nov. 1970

New British hygiene standards for airborne chrysotile dust were developed on the basis of a medical and environmental study at an asbestos textile factory where 290 men were employed in the period 1933-1966. A curve was developed relating the prevalence of asbestosis to exposure. It was concluded that the probable risk of being affected to the extent of early clinical signs will be less than 1% for an accumulated exposure of 100 fiber years/cu.cm (an average concentration during working hours over 50 years of 2 fibers/cu.cm). Reducing exposures to below this level would reduce the risk of contracting asbestosis to less than 1% of those exposed for a lifetime. Recent evaluations of health experience in U.S. asbestos plants indicated that an accumulated exposure of 100 fiber years/cu.cm corresponds to 15 million particle (mp) years/cu.ft. The American TLV of 5 mp/cu.ft. would not be sufficiently low to protect workers exposed for 30 years. Therefore, the ACGIH TLV committee has proposed changes in its hygiene standard to 12 fibers/cu.cm. 8 hr. average. If this proposed change is accepted there will be a rough degree of consistency between the hygiene standards from the two countries' organizations.--Med. Bull.(Std. Oil N.J.) Abstracts

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CLASSIFIED SUBJECT		FELLOWSHIP NUMBER	FILE NUMBER
4/70			752

AUTHOR R.J. Schnitzer and F.L. Pundsack

TITLE Asbestos Hemolysis

ORIG. REFS:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Environ. Research 3	1-13		1/70				

ABSTRACT:

Chrysotile fibers exert a marked hemolytic activity on suspensions of washed sheep erythrocytes, but amphibole asbestiform minerals such as crocidolite, amosite, tremolite, and anthophyllite possess only negligible hemolytic properties. The minimal hemolytic concentration of chrysotile asbestos is dependent on the openness of the fibers as characterized by the air permeability surface area and decreases with increasing surface area. This fact was also observed in the evaluation of hemolysis of fibrous, nonasbestiform minerals, e.g., sepiolite and nemalite. Chrysotile hemolysis can be inhibited by disodium ethylenediaminetetraacetic acid (EDTA) and by certain acidic polymers particularly by polystyrene sulfonates, carboxymethylcellulose ether sodium salt (CMC), and the pyran-copolymer NSC 46015. These substances are not effective as inhibitors of silica (quartz) hemolysis, whereas polyvinylpyridine-N-oxide (PVPNO), a very potent antagonist of silica hemolysis, interferes with chrysotile only at high concentrations. The hemolytic action of chrysotile can be markedly reduced by repeated treatment with red blood cells. The mechanism of asbestos hemolysis cannot yet be satisfactorily interpreted. There is a marked correlation of hemolytic potency with the surface area and the degree of opening of the fibers which may be influenced by the action of the antagonistic polymers. The role of the magnesium hydroxide surface characteristic for chrysotile is not yet elucidated, because magnesium hydroxide is not hemolytic, although nemalite, a natural fibrous magnesium hydroxide, and a lightly burned magnesium oxide are active hemolytic agents. --Authors' abst.

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CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	8/70	9 71		752

AUTHOR: A. Donna

TITLE: Experimental Tumours from Asbestos (chrysotile, crocidolite and amosite) in the Sprague-Dawley rat.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Med. Lavoro	61	1-17	Jan. 1970				

ABSTRACT:

The author has experimented the carcinogenic action of chrysotile, crocidolite and amosite asbestos. The experiments were carried out in the Sprague-Dawley rat, which is known to have a low rate of spontaneous tumours of the respiratory apparatus. The asbestos dust suspended in saline solution was injected into the pleural cavity. After at least 13 months from the treatment mesotheliomas of the pleura and undifferentiated lung cancers were observed. Tumours were obtained in 11.76% of the animals. The statistical evaluation of the data obtained showed a significant and marked dependence of the tumours from asbestos. The correlation between site of injection and site of the neoplasia resulted to be almost constant. --Author's summary

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752

AUTHOR: I. M. Kogan, E. L. Svirskii and E. N. Pochashev.

TITLE: Data for Hygienic Evaluation of Asbestos-Containing "Asbozirite" and "Sovelite" Dusts.

ORIG. REF'S:	VOL.	PP.	DATE	ABSTR. REF'S:	VOL.	PP.	DATE
Hygien&Sanitation	35	339-341	Jan./Feb. 1970				

ABSTRACT:

Asbozurite dust containing asbestos in free mixture with diatomite was found to be more fibrogenic than sovelite dust containing fibers covered with a binding substance (white magnesium and calcium carbonate). Among persons with a sufficiently long record of work under exposition to asbozurite dust several men presented suspicious signs of pneumoconiosis. In hygienic assessment of dust containing asbestos it is necessary to consider, besides its content the presence of a binding component and the type of connection existing between them. --Authors' summary

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CLASSIFIED SUBJECT		NUMBER
	6/70	752

AUTHOR M.A. Gerber

TITLE Asbestosis and Neoplastic Disorders of Hematopoietic System

ORIG. REFS	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Am. J. Clin. Pathol.	53	204 208	Feb. 1970	J. Am. Med. Assn.	211	1560	March 2, 1970

ABSTRACT:

Five cases of asbestosis associated with tumors of the hematopoietic system in a series of 35 cases of asbestosis proved by autopsy are reported. Two were cases of multiple myeloma, two were myeloproliferative disorders and included a case associated with reticulum cell sarcoma, and there was one case of Waldenstrom's macroglobulinemia. The incidence of this association is significantly higher than the overall incidence of such disorders in the corresponding age group of patients without asbestosis. --J. Am. Med. Assn. References and Reviews

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CLASSIFIED SUBJECT | FELLOWSHIP NUMBER | FILE NUMBER 753

AUTHOR M. A. Gerber

TITLE: *Asbestosis and Neoplastic Disorders of the Hematopoietic System.*

ORIG. REPT.:	VOL.	PP.	DATE	ABSTR. REPT.:	VOL.	PP.	DATE
Am. J. Clin. Path.	53	204-208	Feb. 1970				

ABSTRACT:

Gerber, Michael A.

ASBESTOSIS AND NEOPLASTIC DISORDERS OF THE HEMATOPOIETIC SYSTEM. *Am. J. Clin. Path., vol. 53:204-208, Feb. 1970. 17 refs.*

During a period of 11 years, five cases of asbestosis associated with tumors of the hematopoietic system were encountered in a series of 35 cases of asbestosis proved by autopsy. The diagnosis of asbestosis in each of the five cases was based upon pulmonary *fibrosis, hyaline plaques upon the* parietal pleura, including the leaves of the diaphragm, and the presence of characteristic asbestos bodies in the lungs. In Case one and Case two, the associated *malignancy* was multiple myeloma; Case two was noteworthy for the presence of carcinoma of the lung also. In Case three, malignant lymphoma was combined with a myeloproliferative disorder. In Case 4, the myeloproliferative disorder was represented by polycythemia vera and splenoma, with terminal extreme hyperleukocytosis. The patient previously had had a surgical operation for villous adenoma of the colon. In Case 5 the clinical picture and cytology of the bone marrow were consistent with Waldenstrom s disease. The incidence of this association (14.3%) *is significantly higher than the overall incidence* (2.8%) of such disorders in the corresponding age group of patients without asbestosis.

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MELLON INSTITUTE, PITTSBURGH, PA.

AUTHOR: M. Navratil

TITLE: The frequency of pleural calcifications in persons exposed to asbestos dust

ORIG. REF'S.:	VOL.	PP.	DATE	ABSTR. REF'S.:	VOL.	PP.	DATE
Studia pneumo. phtiscol. cechoslo.	30	48-54	Feb. 1970	Occ. Safety & Health Absts.	9	392	1971

ABSTRACT:

THE FREQUENCY OF PLEURAL CALCIFICATIONS IN PERSONS EXPOSED TO ASBESTOS DUST. M. Navratil. *Studia pneumo. phtisiol. cechoslo.* 30: 48-54, Feb. 1970

In the course of a campaign for the detection of asbestosis, the author found pleural calcifications in 5.5% of 400 workers currently or formerly employed in sections of an asbestos factory, where dust exposure was particularly great. Analysis of clinical observations made over a period of 12 years disclosed that pleural calcifications were present in 35% of subjects suffering from asbestosis and in 38.1% of persons in whom possible asbestosis had not been confirmed. No tuberculous aetiology was established, but clinical and anatomical-pathological findings led the author to the conclusion that asbestos dust is only one of the aetiological factors which may favor the development of calcifications; there would otherwise be no explanation for the presence of these formations in persons who have never been exposed to asbestos dust.

--Occ. Safety & Health Absts.

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CLASSIFIED SUBJECT: 6/70

FELLOWSHIP NUMBER:

FILE NUMBER: 752

AUTHOR: Y. Suzuki and J. Churg

TITLE: Formation of the Asbestos Body A Comparative Study with Three Types of Asbestos

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Environ. Research	3	107 118	March 1970				

ABSTRACT:

Asbestos bodies were produced experimentally in the lungs of hamsters by intratracheal instillation of three types of asbestos: soft chrysotile, harsh chrysotile, and amosite. Though some differences were noted, harsh chrysotile and amosite fibers were converted into asbestos bodies by the same successive steps that were previously described for soft chrysotile: (1) phagocytosis of asbestos by alveolar macrophages and other phagocytic cells and incorporation into phagolysosomes; (2) accumulation of iron micelles around the fibers, possibly by fusion of asbestos-containing phagosomes with hemosiderin granules; and (3) compaction of the micelles and clearing of the peripheral zone, to form a mature asbestos body. Formation of asbestos bodies seems to be a continuous process with old bodies growing in thickness and uncoated fibers being converted into bodies months or years after instillation of asbestos. Possible origins of hemosiderin granules are discussed. Striking hyperplasia of cell organelles was found presumably indicative of their participation in the development of the asbestos bodies. --Authors' abst.

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CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	10/70	//62		752

AUTHOR: N. Moreschi, G. Farina, and A. Cardani

TITLE: The pleural calcifications in asbestosis and tuberculosis: elements of differential diagnosis. (Italian)

ORIG. REFS.:	VOL.	PP.	DATE	ABBR. REFS.:	VOL.	PP.	DATE
Med. Lavoro	61	141-153	March 1970				

ABSTRACT:

Forty three cases of pleural calcifications of tubercular origin, observed at the Consorzio Provinciale Antitubercolare of Milan, and 43 pleural calcifications in subjects with asbestosis observed at the Clinica del Lavoro of the University of Milan are presented. The aim of this study was to compare and to study the differential characters of these pleural calcifications. The incidence, the age, the relationship with the length of the exposure to the dust, the latency period, the site and the X-ray aspect were taken into consideration. The percent incidence of pleural calcifications among the

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subjects with TB history (1.41%) and among the subjects with asbestosis (19.2%) was significantly different. All asbestotic calcifications and 76% of the TB calcifications were observed in subjects less than 40 years old. Most asbestotic patients with pleural calcifications had been exposed for more than 15 years to the risk. In no cases has less than 15 years passed since the beginning of the dangerous work; on the contrary among the subjects with past tuberculosis seldom (25%) had the original disease occurred less than 15 years before. Almost all the tubercular pleural calcifications were monolateral and localized to the costal pleura, they were generally unique, large, with marked opacity and granular structure, and presented an irregular outline, often with an evident fibrous implantation site. On the contrary the asbestotic calcifications resulted to be mostly bilateral (54% of the cases) and multiple; they were distributed in the regions where the respiratory excursion is greatest, involved separately or in association the costal, diaphragmatic and mediastinal pleura; were small, of light opacity, homogenous in structure, with distinct and sinous outlines. The single differential characters observed in this study can be of scant diagnostic significance when considered separately; only the finding and the comprehensive evaluation of various elements can help to differentiate pleural calcifications of different origin. --Authors' summary modified

CLASSIFIED SUBJECT		FELLOWSHIP NUMBER	FILE NUMBER
5/71			752

AUTHOR J. McK. Ellison and W. P. Howard.

TITLE The Control of Asbestos in the Working Environment.

ORIG REFS	VOL.	PP.	DATE	ABSTR REFS	VOL.	PP.	DATE
Ann.Occ.Hyg.	13	153-158	April 1970	Occ. Safety & Health Abstracts	9	27(1)	1971

ABSTRACT

THE CONTROL OF ASBESTOS IN THE WORKING ENVIRONMENT. J. McK. Ellison and W. P. Howard. *Ann. Occ. Hyg.* 13: 153-158, April 1970

Summary report of a joint conference on the control of asbestos in the working environment, held by the British Occupational Hygiene Society and the Asbestosis Research Council in London on 18 June 1969. Papers were presented on: asbestos products and health problems; hygiene standards for plants in which exposure to chrysotile asbestos dust occurred; legislation (comparison of the Asbestos Industry Regulations 1931 and the Asbestos Regulations 1969; monitoring techniques and sampling procedures; medical supervision and control. The gist of the papers is reported, together with the ensuing discussion.

--Occ. Safety & Health Abstracts

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STELLAR INSTITUTE, PITTSBURGH, PA.

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8/70 752

AUTHOR: J.H.G. Davis, P. Gross and R.T.P. deTreville

TITLE: "Ferruginous Bodies" in Guinea Pigs

ORIG. REF'S:	VOL.	PP.	DATE	ABSTR. REF'S:	VOL.	PP.	DATE
Arch. Pathol.	89	364-373	April 1970				

ABSTRACT

Electronmicroscope studies of "ferruginous" bodies, produced in guinea pigs in response to fine glass fiber and ceramic aluminum silicate, have shown that the fine structure of these bodies is identical to that of asbestos bodies. All these bodies are produced intracellularly, mainly in giant cells. Their coating consists of small dense granules, approximately 60 Angstroms in diameter, that probably represent ferritin or hemosiderin. This coating may be laid down as a single dense layer or as a series of variable layers. Usually all bodies are separated from the giant cell cytoplasm by a distinct membrane, but in some of the older bodies this membrane is no longer present.
--Authors' abstract

DATE EXAMINED: BY: PURPOSE OF SEARCH: CONT'D:

MELLON INSTITUTE, PITTSBURGH, PA.
FORM 77 10M 4-64

AUTHOR: J. C. Wagner

TITLE: The Pathogenesis of Tumors following the intrapleural injection of asbestos and silica

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Proc.Conf.Morphol. Exptl.Respirat. Carcinogenesis, Gatlinburg, Tenn.		347-358	May 13-16/70	Air Poll. Absts.		3220	Sept. 1971

MELLON INSTITUTE, PITTSBURGH, PA.

FORM 77

The Pathogenesis of Tumors Following the Intrapleural Injection of Asbestos and Silica. J. C. Wagner. *Proc. Conf. Morphol. Exptl. Respirat. Carcinogenesis, Gatlinburg, Tenn., May 13-16, 1970* pp. 347-358

The inhalation of asbestos dust has been associated with the development of pleural and peritoneal mesotheliomas in man. Since experiments had shown that similar tumors could be produced in rats by intrapleural inoculation of several different types of asbestos, a series of experiments was then undertaken to determine if a particular type of fiber or other material could be implicated in the production of the tumors. Early results showed that chrysotile and crocidolite dust produced a high rate of tumors and that the extraction of the oil from the crocidolite had no effect; fewer neoplasms occurred with amosite. The chrysotile used was further studied, first by comparing variation in dosage with the crocidolite and then by comparing with chrysotile samples from seven Canadian mines. All the dusts produced tumors, and the possible physical and chemical characteristics which may account for the difference are being investigated. The reference samples, which were produced as a recommendation of the Union for International Control of Cancer Working Party on Asbestos and Cancer as a basis for further studies, have been inoculated intrapleurally and used in inhalation experiments. Since it was suggested that the reference samples had become contaminated by oils due to being stored in plastic bags, oil-free samples have been used as controls in the intrapleural studies. In addition, silica, which had been used as a control dust in the original experiments, produced a series of tumors, the nature of which required a separate study. A summary of these findings is included. --Air Pollution Abstracts

6/70	209	FELLOWSHIP NUMBER	FILE NUMBER 752

AUTHOR: P. Gross, R.T.P. deTreville, and M.N. Haller

TITLE: Asbestos Versus Nonasbestos Fibers

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Arch. Environ. Health	20	571 578	May 1970				

ABSTRACT:

To classify usefully fibrous dusts inhaled by urban populations, it is suggested that they be categorized initially as asbestos or nonasbestos fibers. This would supply information sufficient for statistical significance and reduce analytical requirements, saving time and money. The ultramicroscopic criteria of asbestos fibers are ends which have profiles characterized by step-like interruptions up or down from each other as seen at a magnification of 20,000 or 25,000 X under the electron microscope, and a surface view (scanning electron microscope at the same magnification) characterized by parallel longitudinal lines that delineate the fibrils. The ultramicroscopic criteria of nonasbestos fibers viewed at 20,000 or 25,000 X magnification are ends which have uninterrupted linear profiles, and a surface view devoid of longitudinal parallel lines.

--Authors' abst.

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DATE EXAMINED: BY: PURPOSE OF SEARCH:

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MELLON INSTITUTE, PITTSBURGH, PA.

FORM 77 (REV. 4-68)

CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	9/70	1-5		752

AUTHOR: J. Bignon and J. Goni

TITLE: Pulmonary Ferruginous Bodies in France

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Am. Rev. Resp. Dis.	101	804-805	May 1970				

In his article entitled "Asbestos and Health in 1969," published in the October 1969 issue of the *Review*, George W. Wright refers to the possibility that the source of ferruginous bodies found in the lungs of almost all Americans could be talc. He inferred that because a great deal of cosmetic talc is used in the United States but not in France, no ferruginous bodies have been found in the lungs of the French population. The author does not believe this evidence is strong enough. In June 1969, preliminary results about the incidence of pulmonary ferruginous bodies in the French population were reported at the Societe Francaise de Pathologie Respiratoire . At present, 58 new cases can be added. In one study ferruginous bodies were found in the lungs of almost all of the 103 persons studied. Only one subject, an 18-year-old girl who lived in the country, did not have ferruginous bodies in the lungs. The youngest patient with ferruginous bodies was 13 years of age. Dust in the lungs of dwellers must be quantitatively nearly the same in Paris as in any great city elsewhere, especially in the United States. The authors are now trying to identify the exact nature of the core of the ferruginous bodies, using the conventional and scanning electron microscopes and the electron microprobe, but the methods of study need to be improved and made safer.

--Cond. from text

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MELLON INSTITUTE, PITTSBURGH, PA.

FORM 7 10M 4-64

SUBJECT		FELLOWSHIP NUMBER	FILE NUMBER
2/71			752

AUTHOR T. J. Weeks and A. F. Burns.

TITLE Performance of Dust Respirators Against A Fibrous Dust.

ORIG. REFS	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Am. Ind. Hyg. Assn.	31	290-293	May/June 1970				

ABSTRACT

A reproducible, easily dispersed, respirable-size fibrous dust was prepared by micropulverizing and air-jet milling a Canadian chrysotile asbestos from the Johns-Manville Jeffrey mine. Three Bureau of Mines approved and five nonapproved respirators were evaluated against this dust, using standard Bureau of Mines techniques. With one exception, all had fiber breakthrough below 1%. --Authors' abst.

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PURPOSE OF SEARCH:

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CLASSIFIED SUBJECT: 8/71

FELLOWSHIP NUMBER:

FILE NUMBER: 752

AUTHOR: H. Bohlig

TITLE: Health hazards from asbestos cement

ORIG. REFS.	VOL.	PP.	DATE	ABBR. REFS.	VOL.	PP.	DATE
Zent. Arbeits med. Arbeitssch	20	201-211	July 1970	Occ. Safety & Health Abst.	9	274(5)	1971

ABSTRACT:

HEALTH HAZARDS FROM ASBESTOS CEMENT. H. Bohlig. *Zent. Arbeits med. Arbeitssch* 20: 201-211, July 1970

An evaluation of the occupational dust hazards to which workers of the asbestos cement industry are exposed in the Federal Republic of Germany. Data are quoted from the literature, and notified and compensated cases are reviewed in tables. The author also discusses the hazards to the general population in areas surrounding asbestos cement factories. --Occ. Safety & Health Abst.

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PURPOSE OF SEARCH:

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NIELSEN INSTITUTE, PITTSBURGH, PA.

FORM 77 10M 4-64

CLASSIFIED SUBJECT			
	12/70		752

AUTHOR: Margaret Turner-Warwick and W. R. Parkes.

TITLE: Circulating Rheumatoid and Antinuclear Factors in Asbestos Workers.

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Brit. Med. J.	3	492-495	Aug. 29, 1970				

ABSTRACT:

In an unselected series of 80 patients with asbestos exposure referred to the London Pneumoconiosis Medical Panel, antinuclear and rheumatoid factors were found in 28 and 27% respectively. This probably represents at least a fourfold increase over their incidence in random populations. The presence of these autoantibodies was not related to the duration of exposure, but was related to the extent of radiographic abnormality. --Authors' summary

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PURPOSE OF SEARCH:

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MEDICAL INSTITUTE, PITTSBURGH, PA.
FORM 77

CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	5/71	515		752

AUTHOR J. R. Lynch, H. E. Ayer and D. L. Johnson.

TITLE The Interrelationships of Selected Asbestos Exposure Indices.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Am.Ind.Hyg.Assn.J.	31	598-604	Sept./Oct. 1970				

ABSTRACT:

THE INTERRELATIONSHIPS OF SELECTED ASBESTOS EXPOSURE INDICES. J. R. Lynch, H. E. Ayer and D. L. Johnson. *Am. Ind. Hyg. Assn. J.* 31: 598-604, Sept./Oct. 1970

Based on the assumption that the biological effect of asbestos is related to the concentration of respirable fibers, an index was developed which yields the concentration in numbers of asbestos fibers visible under 430X phase-contrast illumination. Data are presented relating this index to overall dustiness as measured by impinger counts and to absolute fiber concentration and distribution as measured by electron microscopy. The relation between count estimates and gravimetric measures of total dust and chrysotile asbestos deduced from magnesium analyses are given for gross and respirable samples. These relations are developed for use in operations in the manufacture of asbestos textile, friction, cement, and insulation products. The most convenient, practical, and direct index of asbestos fiber exposure proved to be the concentration of fibers longer than 5 microns counted on membrane filters at 430X phase-contrast illumination. --Authors' abst.

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MELLON INSTITUTE, PITTSBURGH, PA.

FORM 77 10M 4-61

AUTHOR: G. K. Sluis-Cremer.

TITLE: Asbestosis in South African Asbestos Miners.

ORIG. REFS:	VOL.	PP.	DATE	ABSTR. REFS:	VOL.	PP.	DATE
Environ. Res.	3	310-319	Nov. 1970				

A study was carried out on the fate in 1970 of South African Caucasian miners working on the North West Cape crocidolite mines and the Transvaal amosite mines between 1954 and 1958. It was found that both length of asbestos exposure and length of time of residence of asbestos in the lungs are factors of importance in determining the onset of asbestosis. No person in the study group starting work after 1950 has developed bronchial carcinoma or mesothelioma of the pleura. A high incidence of minimal asbestosis is found in Bantu labourers. These lesions are for the most part of no clinical significance though some, with time and in the absence of further exposure, probably will progress to clinically significant disease.

--Author's abst.

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MELLON INSTITUTE, PITTSBURGH, PA.

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CLASSIFIED SUBJECT		FELLOWSHIP NUMBER	FILE NUMBER
3/71	8:1		752

AUTHOR: A. Solomon.

TITLE: Radiological Features of Diffuse Mesothelioma.

ORIG. REFS:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Environ. Res.	3	330-338	Nov. 1970				

An association between asbestos and mesothelioma has been claimed, but in a number of cases there is no indication of exposure to asbestos. The inhalation of asbestos results in the formation of ferruginous bodies in the lungs, but these bodies have also been found in patients without known asbestos exposure. Nevertheless, evidence of exposure to asbestos is forthcoming in most cases of mesothelioma of the pleura. Progressive fibrosis of lung tissue may occur as early as 3-6 years after exposure to asbestos. Little or no detectable lung fibrosis need be associated with benign pleural changes or mesothelioma after asbestos dust exposure. In fact, there does not appear to be a relationship between the severity of pulmonary asbestosis and the development of mesothelioma. --Cond. from text

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ABSTRACT BLANK FOR GENERAL USE

CLASSIFIED SUBJECT		FELLOWSHIP NUMBER	FILE NUMBER
3/71			753

AUTHOR J. McEwen, et al.

TITLE: Mesothelioma in Scotland.

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Brit. Med. J.	4	575-578	Dec. 5, 1970				

ABSTRACT

In a retrospective study of the incidence of mesothelioma in Scotland for 1950-67 80 cases were traced from pathological reports and biopsy material of malignant tumours invading the pleura and peritoneum. These cases were matched with two sets of controls. Detailed histories of residence, occupation, and degree of exposure to asbestos confirmed that the incidence of mesothelioma in Scotland is similar to that in other parts of Britain.

--Authors' summary

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FORM 77 4-64

DATE EXAMINED: BY: PURPOSE OF SEARCH: CONT'D:

ABSTRACT BLANK FOR GENERAL USE

CLASSIFIED SUBJECT		FELLOWSHIP NUMBER	FILE NUMBER
	6/71		752

AUTHOR J. Bignon, et al.

TITLE Incidence of Pulmonary Ferruginous Bodies in France.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Environ. Res.	3	430-442	Dec. 1970				

ABSTRACT

MELLON INSTITUTE, PITTSBURGH, PA.

INCIDENCE OF PULMONARY FERRUGINOUS BODIES IN FRANCE. J. Bignon, et al. *Environ. Res.* 3: 430-442, Dec. 1970

A method of chemical digestion and microfiltration of lung tissue has shown that ferruginous bodies, with a transparent central fiber or invisible core, were present in the lungs of all cases in a series of 100 French people dwelling either in Paris or in the country. The youngest subject was a 13-year-old boy. The ferruginous bodies were counted and cases classified in respect to the frequency of ferruginous bodies per cm^3 of lung. The number of ferruginous bodies seemed to increase with age. Moreover, the percentage of cases with high density of ferruginous bodies was greater in the Paris area than in the country. While no significant relationship was found according with either sex or occupational history, a greater frequency of ferruginous bodies was found in cases with primary lung cancer than with other diseases. The significance of these findings requires more accurate epidemiological study.

--Cond. from authors' abst.

CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	6/71			753

AUTHOR: M. C. Godwin and J. Jagatic.

TITLE: Asbestos and Mesotheliomas.

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DI
Environ. Res.	3	391-416	Dec. 1970				

MEDICAL INSTITUTE, PITTSBURGH, PA.

ASBESTOS AND MESOTHELIOMAS. M. C. Godwin and J. Jagatic. *Environ. Res.* 3: 391-416, Dec. 1970

Seven selected cases with asbestos in the lungs and a mesothelioma in the pleura or peritoneum were studied intensively using routine methods, polarized light, incineration technique, and acid digestion. The authors found that asbestos bodies, fragments, particles, and dust could be found in hilar and mediastinal nodes regularly; asbestos bodies in lymphatics being transported to the nodes; asbestos bodies in the spleen, abdominal tumor, and small bowel wall; and dust and particles in abdominal nodes and peritoneum; a small mesothelioma arising in the pleura in a case of peritoneal mesothelioma; a squamous cell carcinoma in the right lung and a mesothelioma of the left pleura. They concluded that asbestos is irritating mechanically and chemically and that it is distributed widely in the body by the lymphatics and blood resulting in malignancies of various types with pleura and peritoneum being especially susceptible. --Authors' abst. *modified*

Editor's Note: The authors, obviously, have not studied any controls; the reliability of the article as a whole is, perhaps, best epitomized by an illustration (Fig 17) which purports to show asbestos dust in splenic tissue but pictures luminescent *nonfibrous* particles by polarized light. --P.G.

PURPOSE

MELLON INSTITUTE, PITTSBURGH, PA.

12/71

FELLOWSHIP NUMBER

FILE NUMBER 752

AUTHOR H. J. Woitowitz

TITLE Occupational exposure to asbestos and obstructive respiratory disorders

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Int. Arch. Occ. Health	27	244-256	Dec. 31, 1970	Occ. Safety & Health Absts.	9 No. 9	514	1971

ABSTRACT:

OCCUPATIONAL EXPOSURE TO ASBESTOS AND OBSTRUCTIVE RESPIRATORY DISORDERS. H. J. Woitowitz. *Int. Arch. Occ. Health* 27: 244-256, December 31, 1970

The purpose of this study was to determine the relationship between chronic obstructive respiratory disorders and occupational exposure to asbestos. The results presented (forced expiratory volume for 1 sec., airway resistance) are based on examinations carried out on 465 active and 31 retired workers with a history of exposure to measurable concentrations of asbestos, and on the findings made in 69 cases of asbestosis. They provide no clear evidence that exposure to asbestos contributes to obstructive respiratory disorders. --Occ. Safety & Health Absts.

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PURPOSE OF SEARCH:

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Digest Date	Digest Number	Page Number
11/74		752

Author J. Bignon

Title Epidemiological Studies on Accumulation of Ferruginous, Asbestos or Other Exogenous Substances in Human Lungs

Journal Ref's	Vol.	Pp.	Date	Abstr. Ref's	Vol.	Pp.	Date
Air Conservation	5	38-42	(1) 1971				

Abstract

In view of the fact that bodies are formed not only of asbestos, the frequency of occurrence of "ferruginous bodies" in human lungs has been investigated. At the same time, an epidemiological study was performed with reference to sex, age, residence, etc.

Industrial Health Foundation, Pittsburgh, Pa.

8/71

FELLOWSHIP NUMBER

FILE NUMBER 752

AUTHOR M. Sheinbaum

TITLE Recommended Safe Practices for Spraying Asbestos

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Ind. Hyg. Review	13	3-5	Jan. 1971				

ABSTRACT

RECOMMENDED SAFE PRACTICES FOR SPRAYING ASBESTOS. M. Sheinbaum. *Ind. Hyg. Review* 13: 3-5, Jan. 1971

Wetted mixtures of asbestos and other materials are widely used by the construction industry as insulation in fireproofing building components and in coating surfaces to deaden sound. The mixtures are applied by spraying, which may result in the release of high airborne concentrations of fibers. In cases where asbestos must be sprayed, recommendations are given which should be followed to safeguard the health of those who may be exposed to respirable airborne fibers. --Cond. from text

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PURPOSE OF SEARCH:

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MELLON INSTITUTE, PITTSBURGH, PA.

FORM 77

7/71 752

AUTHOR D. R. Gracey, et al.

TITLE: Pulmonary Complications of Asbestos Exposure

ORIG. REPS.	VOL.	PP.	DATE	ABSTR. REPS.	VOL.	PP.	DATE
Chest	59	77-81	Jan. 1971				

ABSTRACT:

PULMONARY COMPLICATIONS OF ASBESTOS EXPOSURE. D. R. Gracey, et al. *Chest* 59: 77-81, Jan. 1971

The patient described in this article developed a malignant pleural mesothelioma more than 25 years following brief employment in an asbestos processing plant. The authors discuss the relationship between asbestos exposure and neoplasm, the intriguing subject of co-carcinogenesis and the potential hazard to urban dwellers from the increasing industrial usage of asbestos. Pleural and parenchymal fibrosis are common radiologic features of pulmonary asbestosis but are by no means unique to this disorder. Similarly, pulmonary function abnormalities may include the entire gamut of physiologic changes, depending upon the stage of the disease, complications and associated pathologic lesions. Unfortunately, no treatment is possible for this type of mesothelioma other than temporary palliation of the pleural effusion.

--Cond. from text

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MELLON INSTITUTE, PITTSBURGH, PA.

FORM 77

CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	8/71			752

AUTHOR L. Lapez-Areal

TITLE: Clinical Observations and Bibliographical Summary of the Hazards Involved with Asbestos

ORIG. REFS:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Med. Trabajo	19	21-40	Jan./March 1971				

ABSTRACT:

CLINICAL OBSERVATIONS AND BIBLIOGRAPHICAL SUMMARY OF THE HAZARDS INVOLVED WITH ASBESTOS. L. Lapez-Areal. *Med. Trabajo* 19: 21-40, Jan/March 1971 (Spanish)

The author gathers the 18 cases of lung asbestosis and the one case of pleural mesothelioma observed by him. Of the asbestosis cases, 3 have died of lung cancer. He describes the histories of the cases observed: date, age, dust exposure time, clinical and radiological examination, respiratory functional tests, sputa, pleural or lung biopsy, evolution, condensing these histories into tables. He insists upon the need to make early diagnosis for which he advises weekly radiographies of the personnel exposed to the hazards of handling the asbestos mineral. He feels that the search and discovery of the pleural radiological signs are important. He mentions the radiological differences found when the inhalation of asbestos dust is accompanied by that of other inert materials (talcum, kaolin, etc.), or silicious earths (diatom earth), in which case pulmonary fibrosis is not linear, but mixed with nodulations and even with more or less confluent shadows. Respiratory functional tests are necessary for the diagnosis and specification. 120 references --Cond. from authors summary

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FORM 77

MELLON INSTITUTE, PITTSBURGH, PA.

CLASSIFIED SUBJECT	FELLOWSHIP NUMBER	FILE NUMBER
5/71		752

AUTHOR: L. J. Cralley.

TITLE: Identification and Control of Asbestos Exposures.

ORIG. REF'S.	VOL.	PP.	DATE	ABSTR. REF'S.	VOL.	PP.	DATE
Am.Ind.Hyg.Assn.J.	32	82-85	Feb. 1971				

ABSTRACT

IDENTIFICATION AND CONTROL OF ASBESTOS EXPOSURES. L. J. Cralley. *Am. Ind. Hyg. Assn. J.* 32: 82-85, Feb. 1971

Asbestos can be used safely in modern industrial technology if adequate precautions are taken to prevent excessive and unsuspected exposures. To distinguish between asbestos and other fibers, new techniques must be applied to electron microscopy and diffraction, emission and atomic absorption spectrophotometry, electron microprobe, and neutron activation analytical procedures. Standards and evaluation techniques should be based on air-borne fibers and the use of the membrane filter and phase contrast microscopy for sampling and counting. Controls should include procedures for the safe transport of asbestos; exhaust ventilation and personal protection at work sites; the safe disposal of waste dusts; and the prevention of community contamination. --Author's abst.

CONT'D.

MELLON INSTITUTE, PITTSBURGH, PA.

AUTHOR E. A. Gaensler and A. I. Kaplan.

TITLE Asbestos Pleural Effusion.

ORIG. REFS	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Ann. Int. Med.	74	178-191	Feb. 1971				

ASBESTOS PLEURAL EFFUSION. E. A. Gaensler and A. I. Kaplan. *Ann. Int. Med.* 74: 178-191, Feb. 1971

The differential diagnosis of pleural effusion is large but has not included asbestos exposure. For 1 to 9 years we followed 12 patients with "idiopathic" effusions that were frequently recurrent, usually bilateral, and often followed by continued chest pain. The fluid was a sterile, serous, or blood-tinged exudate. Physical findings were limited to clubbing, dry rales, and signs of effusion. Asbestos exposure was from 3 to 38 years, but often this history was elicited only with difficulty. Usually, mechanics of breathing were normal, lung diffusing capacity reduced, and alveolar-arterial Po_2 differences elevated. Decortication and lung biopsy specimens in seven patients and postmortem examination in one showed nonspecific pleuritis with rare asbestos bodies and fibers; all had various degrees of chronic interstital pneumonitis with asbestos bodies. One case of mesothelioma was recognized 9 years after the first documented effusion. With better understanding of the dangers of asbestos and better surveillance of workers, asbestos pleural effusion will be recognized oftener. It occurred in 21% of all patients with asbestosis seen at our laboratory. 35 references.

--Authors' abst.

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FORM 77

2/72		752

AUTHOR: B. Pernis and P. Castano

TITLE: The effect of Asbestos on Cells in Vitro.

ORIG. REFS.	VOL.	PP.	DATE	ABBRV. REFS.	VOL.	PP.	DATE
Med. Lavoro	62	120-129	Feb.-Mar. 1971	(Italian			

ABSTRACT:

The Effect of Asbestos on Cells in Vitro. B. Pernis and P. Castano. Med. Lavoro. 62: 120-129. Feb.-Mar. 1971 (Italian)

Experiments have been carried out to investigate the effect of different asbestos dusts (crocidolite and chrysolite) on long term cultures (more than 6 weeks) of mouse peritoneal macrophages. Some cultures were treated with ferritin with the aim of testing the possible formation of asbestos bodies in vitro. Finally trials with silica in the same culture conditions have been made as controls. The preliminary results indicate that in optimal culture conditions asbestos is not cytotoxic. Such data are discussed with reference to the contrasting results previously obtained, and to the effect of silica. Moreover the problem of the effect of asbestos in vivo and the problem of asbestos body formation is briefly discussed.
--Authors' summary

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MELLON INSTITUTE, PITTSBURGH, PA.

FORM 44 NOV 49-4

5771

AUTHOR A. M. Langer, I. J. Selikoff and A. Sastre.

TITLE Chrysotile Asbestos in the Lungs of Persons in New York City.

ORIG. REFS.	VOL.	PP.	DATE	ABBR. REFS.	VOL.	PP.	DATE
Arch.Environ.Hlth.	22	348-361	March 1971				

ABSTRACT

CHRYSOTILE ASBESTOS IN THE LUNGS OF PERSONS IN NEW YORK CITY. A. M. Langer, I. J. Selikoff and A. Sastre. *Arch. Environ. Health* 22: 348-361, March 1971

When inhaled, chrysotile tends to split into unit fibrils 200 to 400 Angstroms in diameter, invisible with optical microscopy. Further, it is altered chemically and physically invivo. Therefore, attempts to identify unaltered chrysotile in the core of "asbestos bodies" have many pitfalls, especially when such attempts are limited by optical microscopy. High-magnification electron-microscopic examination of representative small samples of lung unequivocally showed chrysotile asbestos to be present in 24 to 28 consecutive New York city autopsy cases. Our data demonstrate that chrysotile fibers and fibrils are present in the lungs of New York city residents. Similar observations have been made in London. We anticipate that what is now know for New York and London will be found in other cities as well. 33 references. --Authors' abst.

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MELLON INSTITUTE, PITTSBURGH, PA.
104 4-64
FORM 77

CLASSIFIED SUBJECT 5/72 NUMBER 573 752

AUTHOR J. M. G. Davis

TITLE Epithelial Outgrowths from LUng Tissue Following Intrapleural Injection of Asbestos Dust in Experimental Animals.

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Int. J. Cancer	7	238	Mar 15, 1971	J. Occ. Med.	14	162	Feb. 1972

ABSTRACT:

Epithelial Outgrowths from Lung Tissue Following Intrapleural Injection of Asbestos Dust in Experimental Animals. J. M. G. Davis. Int. J. Cancer 7: 238, March 15, 1971

Granulomas developed following intrapleural injection of asbestos dust in experimental animals, and large areas of the pleural surface became thickened with fibrous tissue. In guinea pigs injected with chrysotile dust, alveolar epithelial cells migrated through the lung surface and were found lining spaces in the areas of pleural fibrosis. Initially, these cells exhibited the exact structure of the surfactin-secreting type of alveolar cell, but later many of the cells lost the surfactin granules from their cytoplasm and became ciliated. Cystic formation occurred in the lung tissue of some animals, and groups of cysts grew out from the lining to invade the areas of pleural fibrosis. These cysts were also lined with surfactin-secreting alveolar cells. The possible association of these epithelial outgrowths and the well-known difficulties of diagnosing pleural mesotheliomas are discussed.

--J. Occ. Med. Abstracts

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MELLON INSTITUTE, PITTSBURGH, PA.

FORM 77 JN 4-64

AUTHOR B. Castleman and Betty U. McNeely.

TITLE Case Records of the Massachusetts General Hospital.

JOURNAL REFS	VOL.	PP.	DATE	ABSTR. REFS	VOL.	PP	DATE
New Engl. J. Med.	284	778-786	April 8, 1971				

ABSTRACT

MEDICAL INSTITUTE, PHILADELPHIA, PA.

FORM 77 10M 4-64

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CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	8/71		71	752

AUTHOR J. S. Harington, Klara Miller, and Gwen Macnab

TITLE Hemolysis by Asbestos

ORIG. REFS.)	VOL.	PP.	DATE	ABSTR. REFS.)	VOL.	PP.	DATE
Environ. Res.	4	95-117	April 1971				

HEMOLYSIS BY ASBESTOS. J. S. Harington, Klara Miller, and Gwen Macnab. *Environ. Res.* 4: 95-117, April 1971

Chrysotile asbestos hemolyses erythrocytes within 10 minutes and over a wide range of pH. Other forms of asbestos show varying hemolytic activities which are related to the magnesium:silicon ratio of each form studied. Erythrocytes from different species of animals show different degrees of hemolysis when exposed to chrysotile, amosite, and crocidolite. The length of time during which erythrocytes are exposed to relatively inactive forms of asbestos should also be considered. Amosite and crocidolite show greater hemolytic activities when allowed to react with erythrocytes over 4 hours instead of 1. Ethylenediaminetetraacetic acid (EDTA) effectively prevents hemolysis by chrysotile and other asbestiform materials containing magnesium as a formal part of the lattice. This prevention is pH dependent, however. Sialic acid is even more effective as a preventive agent than EDTA, suggesting that it may contribute the main anionic groups which react with the positively charged magnesium ions on the surface of chrysotile during hemolysis. Poly-2-vinylpyridine-1-oxide, an effective inhibitor of hemolysis by silica powder, has little effect on hemolysis by chrysotile. This again accords with the suggestion that magnesium is the principal agent in hemolysis by asbestos. An association exists between

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cytotoxicity and hemolytic activity of various forms of asbestos and other minerals although the significance of this is not yet clear. 63 references --Authors' abst.

CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	9/71		96-3	752

AUTHOR: A. Holmes, A. Morgan, and F. J. Sandalls

TITLE: Determination of Iron, Chromium, Cobalt, Nickel, and Scandium in Asbestos by Neutron Activation Analysis

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Amer. Ind. Hyg. Assn. J.	32	281-286	May 1971				

ABSTRACT:

DETERMINATION OF IRON, CHROMIUM, COBALT, NICKEL, AND SCANDIUM IN ASBESTOS BY NEUTRON ACTIVATION ANALYSIS.

A. Holmes, A. Morgan, and F. J. Sandalls. *Amer. Ind. Hyg. Assn. J.* 32: 281-286, May 1971

Iron, chromium, cobalt, nickel, and scandium were determined by neutron activation analysis (1) in the five UICC standard reference samples of asbestos, (2) in the individual samples of Canadian chrysotile which were blended to produce the reference sample chrysotile B, and (3) in a number of samples of crocidolite from both the North West Cape and Transvaal deposits in South Africa. High resolution γ-ray spectrometry was used to show that milling had not produced any significant change in the composition of the UICC standard reference samples. --Authors' abst.

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10M 4-64

FORM 77

AUTHOR P. Gross, J. Tuma and R.T.P. deTreville.

TITLE Unusual Ferruginous Bodies: Their Formation From Nonfibrous Particulates and From Carbonaceous Fibrous Particles.

ORIG. REFS:	VOL.	PP.	DATE	ABSTR. REFS:	VOL.	PP.	DATE
Arch.Environ.Hlth.	22	534-537	May 1971				

ABSTRACT:

UNUSUAL FERRUGINOUS BODIES: THEIR FORMATION FROM NONFIBROUS PARTICULATES AND FROM CARBONACEOUS FIBROUS PARTICLES. P. Gross, J. Tuma and R. T. P. deTreville. *Arch. Environ. Health* 22: 534-537, May 1971

Reprints available from Industrial Health Foundation, 5231 Centre Avenue, Pittsburgh, Penna. 15232

Among the ferruginous bodies isolated from the lungs of people not occupationally exposed to asbestos dust are those which have a nonfibrous core. These bodies are generally round or ovoid, 4μ to 30μ in diameter, and vary in color from translucent light yellow to semitranslucent red-gold. Their central core may be composed of a single large, or multiple small, particles which may be colorless and translucent or black and opaque. Ferruginous bodies with black fibrous cores are believed to owe their origin to inhaled smoke particles from burning leaves, paper, wood, or coal. --Authors' abst.

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CLASSIFIED SUBJECT		FELLOWSHIP NUMBER	FILE NUMBER
	9/71		752

AUTHOR E. A. Gaensler and A. I. Kaplan

TITLE Asbestos Pleural Effusion

ORIG. REF'S:	VOL.	PP.	DATE	ABSTR. REF'S:	VOL.	PP.	DATE
Amer.Rev. Resp.Dis	103	872	June 1971				

MELLON INSTITUTE, PITTSBURGH, PA.

ASBESTOS PLEURAL EFFUSION. E. A. Gaensler and A. I. Kaplan. *Amer. Rev. Resp. Dis.* 103: 872, June 1971

Thirteen patients with "idiopathic" pleural effusions, which were frequently recurrent, often bilateral, and usually followed by continued chest pain, were followed from two years to ten years. Their asbestos exposure ranged from 3 years to 38 years, but in some cases this history was elicited only with difficulty and in retrospect. Excluded from this series were another 12 patients with asbestosis in whom effusion occurred in relation to broncheogenic carcinoma, mesothelioma, or congestive heart failure. The fluid always was a sterile exudate and sometimes was blood-tinged. Physical findings were limited to clubbing, dry rales, and signs of effusion. Mechanics of breathing were normal in most cases, but all patients had reduced diffusing capacities and increased alveolar-arterial differences for oxygen tension. The diagnosis of asbestos effusion was confirmed by decortication and lung biopsy, sometimes bilaterally, in 8 patients, and by postmortem examination in one patient. In each case there was a nonspecific pleuritis with rare asbestos bodies and fibers seen only close to the original pleura; all patients had varying degrees of chronic interstitial pneumonitis with asbestos bodies. In one patient a mesothelioma was recognized certainly 9 years and possibly 11 years after his first documented effusion. It is believed that, with increasing appreciation of the dangers of asbestos and with better surveillance of workers,

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asbestos pleural effusion will be recognized more often. Among patients referred to the writers' laboratories with asbestosis or asbestos exposure, 21 per cent were thought to have "asbestos pleural effusion." --Cond. from Abstracts Papers Ann. Mtg. Amer. Thoracic Soc.

AUTHOR: J. C. McDonald, et al.

TITLE: Mortality in the Chrysotile Asbestos Mines and Mills of Quebec

ORIG. REF'S.	VOL.	PP.	DATE	ABSTR. REF'S.	VOL.	PP.	DATE
Arch. Environ. Health	22	677-686	June 1971				

ABSTRACT:

MORTALITY IN THE CHRYSOTILE ASBESTOS MINES AND MILLS OF QUEBEC. J. C. McDonald, et al. *Arch. Environ. Health* 22: 677-686, June 1971

Of 11,788 persons born between 1891 and 1920 employed in the Quebec asbestos mining industry, 88.4% were traced. Of these 2,457 (23.6%) had died. Exposure indexes for each worker were calculated from job dust levels and duration of employment. The overall mortality was lower than expected for the population of Quebec but in the highest dust category, comprising 5% of the cohort, the age-standardized rate was 20% higher than in the other groups. Respiratory, cardiovascular, and malignant diseases in equal proportions accounted for the excess. There were 101 deaths from respiratory cancer including three from malignant mesothelioma, an estimated excess of about 15 deaths. The difference in rates for respiratory cancer between those maximally and minimally exposed was fivefold and, though perhaps exaggerated, was apparently determined by accumulated dust exposure and duration of employment. --Authors' abst.

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CLASSIFIED SUBJECT

11/71 | | 752

AUTHOR J. H. M. Langlands, W. F. M. Wallace and Marion J. C. Simpson'

TITLE: Insulation workers in Belfast. 2. Morbidity in men still at work

ORIG. REF'S.	VOL.	PP.	DATE	ABSTR. REF'S.	VOL.	PP.	DATE
Brit. J. Ind. Med.	28	217-225	July 1971				

INSULATION WORKERS IN BELFAST: MORBIDITY IN MEN STILL AT WORK. J. H. M. Langlands, W. F. M. Wallace, and Marion J. C. Simpson. Brit. J. Ind. Med. 28: 217-225, July 1971

Two hundred and fifty-two (93%) of the insulation workers in Belfast were examined by chest x-ray, questionaire, clinical examination, and tests of respiratory function. The frequency of chest x-ray abnormality lung field or pleural, increased from 13% in men who had worked for less than 10 years to 85 in men who had worked for 30 or more years in the industry. Pleural calcification was found in 15 x-rays. There was evidence suggesting that some men had pleural fibrosis or calcification due to exposure to asbestos in childhood. Rales were present in 61% and clubbing in 11% of men with lung field abnormality, but these were not common when the x-rays showed only pleural abnormality. Where the lung fields were involved there was a restrictive defect with impairment in lung function most marked in the forced vital capacity and single breath carbon monoxide transfer factor, but where the pleura was involved without lung field involvement there was a tendency to impairment of ventilatory function with a normal transfer factor. Cigarette smoking was associated with a greater impairment of lung function than was x-ray abnormality. --Authors' abst.

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CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	11/71		/ / /	752

AUTHOR: W. F. M. Wallace and J. H. M. Langlands

TITLE: Insulation workers in Belfast. 1. Comparison of a random sample with a control population

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Brit. J. Ind. Med.	28	211-216	July 1971				

ABSTRACT:

INSULATION WORKERS IN BELFAST: COMPARISON OF A RANDOM SAMPLE WITH A CONTROL POPULATION. W. F. M. Wallace and J. H. M. Langlands. *Brit. J. Ind. Med.* 28: 211-216, July 1971

A sample of 50 men was chosen at random from the population of asbestos insulators in Belfast and matched with a control series of men of similar occupational group with respect to age, height, and smoking habit. Significantly more of the insulators complained of cough and sputum and had basal rales on examination. Clubbing was assessed by means of measurements of the hyponychial angle of both index fingers. These angles were significantly greater in the group of insulators. Twenty-one insulators had x-rays which showed pleural calcification with or without pulmonary fibrosis; one control x-ray showed pulmonary fibrosis. The insulators had no evidence of airways obstruction but static lung volume was reduced and their arterial oxygen tension was lower than that of the controls and their alveolar-arterial oxygen gradient was greater. 34 references. --Authors' abst.

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AUTHOR P. C. Elmes and Marion J. C. Simpson

TITLE Insulation workers in Belfast. 3. Mortality 1940-66.

ORIG. REFS	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Brit. J. Ind. Med.	28	226-236	July 1971				

INSULATION WORKERS IN BELFAST: MORTALITY 1940-66. P. C. Elmes and Marion J. C. Simpson. *Brit. J. Ind. Med.* 28: 226-236, July 1971

One hundred and seventy men were identified as making up the total population of insulation workers in Belfast in 1940. This is an analysis of all the information about deaths that has emerged from tracing these men up to the end of 1966. Five remain untraced, and the mortality experience of the remainder is compared with that of other men in Northern Ireland over the period. There were 98 deaths when only 37 were expected. The number of deaths occurring exceeded those expected throughout the period 1940-66 and the increase was statistically significant during the period 1950-55 and onwards. There was an especially high mortality (compared with other Northern Ireland males) due to cancer of the lung, mesothelioma of the pleura and peritoneum, cancer of the gastrointestinal tract, and fibrotic lesions of the lungs. The ratio of observed over expected deaths was 2.6 for all causes, 3.9 for all cancers, and 17.6 for cancers of the lower respiratory tract and pleura. Those men finally classified as dying from lung cancer showed evidence of lung fibrosis whereas those classified as dying from mesothelioma did not. Comparisons within the group failed to show any relationship between age at first exposure or duration of exposure and the excessive mortality. There were too few non-smokers to show the significance of smoking. --Authors' abst.

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MELLON INSTITUTE, PITTSBURGH, PA.

AUTHOR W. Weiss

TITLE Cigarette Smoking, Asbestos, and Pulmonary Fibrosis

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Am. Rev. Resp. Dis.	104	223-227	Aug. 1971				

ABSTRACT:

CIGARETTE SMOKING, ASBESTOS, AND PULMONARY FIBROSIS. W. Weiss. *Am. Rev. Resp. Dis.* 104: 223-227, August 1971

A group of 100 asbestos textile workers was examined by chest roentgenogram and a questionnaire concerning age, sex, smoking habits, and duration of occupational exposure to asbestos. The roentgenograms were examined for evidences of pulmonary fibrosis without knowing the results of the questionnaire. Seventy-five workers were cigarette smokers and 25 were nonsmokers. The prevalence of pulmonary fibrosis was 40 per cent in the smokers and 24 per cent in the nonsmokers. The factors of age, sex, and duration of exposure to asbestos did not account for this difference. The prevalence of pulmonary fibrosis increased with increasing amount and duration of cigarette smoking and with increasing duration of exposure to asbestos.

--Author's summary

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CLASSIFIED SUBJECT		FELLOWSHIP NUMBER	FILE NUMBER
	11/71		752

AUTHOR P. G. Harries

TITLE A comparison of mass and fibre concentrations of asbestos dust in shipyard insulation processes

ORIG. REFS	VOL.	PP.	DATE	ADDTN. REFS.	VOL.	PP.	DATE
Ann. Occ. Hyg.	14	235-240	Sept. 1971				

ABSTRACT:

A COMPARISON OF MASS AND FIBRE CONCENTRATIONS OF ASBESTOS DUST IN SHIPYARD INSULATION PROCESSES.

P. G. Harries. *Ann. Occ. Hyg.* 14: 235-240, Sept. 1971

Measurements have been made of the mass and fibre concentrations of dust produced during shipyard processes involving asbestos insulating materials. Comparison of the results of measuring total dust, "respirable" dust and fibre concentration show that gravimetric measurements are not suitable for environmental monitoring in Naval Dockyards. The membrane filter technique for estimating fibre concentration is recommended for that purpose. --Author's abst.

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FORM 77

CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	11/71		1194	752

AUTHOR: P. G. Harries

TITLE: Asbestos dust concentrations in ship repairing: A practical approach to improving asbestos hygiene in naval dockyards

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Ann. Occ. Hyg.	14	241-254	Sept. 1971				

ABSTRACT:

ASBESTOS DUST CONCENTRATIONS IN SHIP REPAIRING. P. G. Harries. *Ann. Occ. Hyg.* 14: 241-254, Sept. 1971

A survey of the asbestos fibre concentrations associated with work involving asbestos insulating materials has been undertaken in Devonport Dockyard. The results show that application and removal of asbestos materials both create high dust concentrations, and measures to reduce the health hazards associated with such processes are described. The results of sampling after the introduction of preventive measures are briefly presented and these results indicate that the precautions are effective in reducing the asbestos dust concentrations in shipyard insulation processes. --Author's abst.

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MELLON INSTITUTE, PITTSBURGH, PA.

AUTHOR: L. J. Cralley

TITLE: Electromotive Phenomenon in Metal and Mineral Particulate Exposures: Relevance to Exposure to Axbestos and Occurrence of Cancer

ORIG. REF'S:	VOL.	PP.	DATE	ABSTR. REF'S:	VOL.	PP.	DATE
Am. Ind. Hyg. Assn. J.	32	653-661	Oct. 1971				

ABSTRACT:

Electromotive Phenomenon in Metal and Mineral Particulate Exposures: Relevance to Exposure to Asbestos and Occurrence of Cancer. L. J. Cralley. Am. Ind. Hyg. Assn. J. 32: 653-661, Oct. 1971

Exposures to metallic particulates, individually and in alloys, along with mineral particulates may give rise to an electromotive phenomenon wherein high levels of biologically active cations are produced at localized tissue sites. The relative position of the involved metals in the electromotive series along with the nature of the associated metals and other minerals will influence the nature and concentration of the cations. This phenomenon may account for otherwise unexplained exacerbations of diseases, sensitization reactions, carcinogenicity, latency periods, and other responses. The potential role of this phenomenon in exposure to metals in asbestos is recognized, and supporting data are presented. 26 references.

--Author's abst.

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CLASSIFIED SUBJECT | 3/72 | NUMBER | 2:5 | 752

AUTHOR: J. E. H. Milne

TITLE: Developmental Changes in Asbestos Bodies and their Significance

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Trans. Soc. Occ. Med.	21	118-121	Oct. 1971				

ABSTRACT:

Developmental Changes in Asbestos Bodies and Their Significance. J. E. H. Milne. Trans. Soc. Occ. Med. 21: 118-121, October 1971

When industrial fibres are inhaled they may become "ferruginous bodies" by being coated with a segmented iron-protein envelope. A few ferruginous bodies are demonstrable in almost every human lung using tissue digestion techniques. When large numbers are found they probably arise from industrial exposure to asbestos fibres. That is, they are "asbestos bodies." Electron microscope studies can point to whether the central fibre of a ferruginous body is asbestos. Asbestos fibres have longitudinal striation and stepped ends. The asbestos body matures from a thin yellow beaded object to a shorter thicker dark-brown segmented shape, whose coating becomes granulated; fragmentation and phagocytosis then occur. Asbestos bodies found in sputum signify only asbestos exposure. With histological sections, the finding of more than one ferruginous body in each slide of a random series indicates that they are probably asbestos bodies. Large numbers of asbestos bodies in lung plus diffuse fibrosis would indicate asbestosis-and where neoplasia is involved, occupational exposure to asbestos may be causative. Asbestos bodies may pass unrecognised with resultant failure to establish their relationship to mesothelioma, and the importance is stressed of recognition of the post-mature degenerating granulated asbestos body. --Author's summary

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MEDICAL INSTITUTE, PITTSBURGH, PA.

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CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	4/72		37	752

AUTHOR: S. G. Luxon

TITLE: The Use of Dust Respirators Against Asbestos Dust Hazards in the United Kingdom

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Am. Ind. Hyg. Assn. J.	32	723-725	Nov. 1971				

ABSTRACT:

The Use of Dust Respirators Against Asbestos Dust Hazards in the United Kingdom. S. G. Luxon. Am. Ind. Hyg. Assn. J. 32: 723-725, November 1971

Practice in the United Kingdom concerning the use of respirators for protection against asbestos dust restricts the application of specific types of respirators. Simple dust respirators are limited to use in concentrations not exceeding 40 fibers per cubic centimeter of air for chrysotile and amosite asbestos and 4 fibers per cubic centimeter of air for crocidolite asbestos. Positive-pressure dust respirators are restricted to use in concentrations not greater than 200 fibers per cubic centimeter of air for chrysotile and amosite asbestos and 20 fibers per cubic centimeter of air for crocidolite asbestos. Ultra-high-efficiency dust respirators may be used in concentrations up to 800 fibers per cubic centimeter of air for chrysotile and amosite asbestos and 80 fibers per cubic centimeter of air for crocidolite

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MELLON INSTITUTE, PITTSBURGH, PA.

AUTHOR: J. Simecek

TITLE: Dust Investigations in an Asbestos-Processing Plant and Its Surroundings

ORIG. REF'S	VOL.	PP.	DATE	ABSTR. REF'S:	VOL.	PP.	DATE
Staub Reinhalt. Luft	31	26-31	Dec. 1971				

ABSTRACT:

In an asbestos processing plant dust concentrations were determined at working places and also in the plant surroundings. The individual working places can be assessed on the basis of results obtained by measurements carried out from 1965 to 1969. The measurements effected outside the plant buildings have shown that the maximum value of 0.15 mg/m^3 was exceeded in the summer months in 20% of the cases, and in the winter months in 50% of the cases. The asbestos particles present in samples are detected under the electron microscope. The particle size distribution and concentration (1.7 particles/cm^3), and also the asbestos content (<1 weight %) were determined. --Author's summary

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CLASSIFIED SUBJECT

11/72 | / - | 752

AUTHOR: M. Tomasini and E. Sartorelli

TITLE: Frequency of Electrocardiographic Signs of Chronic cor pulmonale in Asbestosis.

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Med. Lavoro	62	549-553	Dec. 1971				

ABSTRACT:

Frequency of Electrocardiographic Signs of Chronic Cor Pulmonale in Asbestosis. M. Tomasini and E. Sartorelli. Med. Lavoro 62: 549-553, Dec. 1971

A study has been carried out on the frequency of electrocardiographic signs of chronic cor pulmonale among 181 asbestosis patients, divided into three groups according to severity of pulmonary fibrosis, judged on the basis of radiologic criteria (U.I.C.C. classification of pneumoconioses, Cincinnati): 85 cases with slight asbestosis, 86 cases with moderate asbestosis, 10 cases with severe asbestosis. In each electrocardiogram the presence of P pulmonale, of right axial deviation of QRS, of patterns of right ventricular hypertrophy, and of right branch block (RBB) was searched for. Nine cases with slight asbestosis showed a right axial deviation of QRS; among the subjects with moderate asbestosis, five showed right axial deviation of QRS and one showed RBB; one case with severe asbestosis presented a P pulmonale with right axial deviation of QRS, and another case showed a RBB. A comparison between electrocardiographic signs and CO diffusion capacity (steady-state method) (a respiratory functional index often modified in asbestosis) showed a lack of correlation. The conclusion is drawn that the electrocardiogram is inadequate in the early diagnosis of chronic cor pulmonale in asbestosis. Therefore it is hoped that more valuable tests, such as right cardiac catheterism with microcatheter, might be used for the detection of an eventual early pulmonary artery hypertension. --Authors' summary

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MELLON INSTITUTE, PITTSBURGH, PA.

FORM 77

4/72 | 32K | 752

AUTHOR: R. F. Hounam

TITLE: The Konimiser - A Dispenser for the Continuous Generation of Dust Clouds from Milligram Quantities of Asbestos

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Ann. Occ. Hyg.	14	329-335	Dec. 1971				

ABSTRACT:

The Konimiser - A Dispenser for the Continuous Generation of Dust Clouds from Milligram Quantities of Asbestos. R. F. Hounam. Ann. Occ. Hyg., 14: 329-335, December 1971

The dispenser described was designed for use in inhalation experiments in which rats are exposed to airborne asbestos. By using radioactive asbestos produced by irradiation with thermal neutrons in a reactor, it was planned to study the deposition patterns produced by different types of fibre and the clearance of material from the respiratory tract. The dispenser was designed to generate dust clouds from any sample of asbestos with a high proportion of fibres in the respirable range and to be operated in conjunction with an exposure chamber holding four rats. This was similar in design to a chamber used at the Medical Research Council Pneumoconiosis Unit. As the dispenser works by a process analogous to atomisation and disperses quite small amounts of asbestos into an air stream with reasonable efficiency to provide respirable airborne dust, it is called a "Konimiser." --Cond. from text

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FORM 77

MELLON INSTITUTE, PITTSBURGH, PA.

FORM 77 NO. 14

8/72		953	752

AUTHOR: A. Morgan, A. Holmes and C. Gold

TITLE: Studies of the Solubility of Constituents of Chrysotile Asbestos in Vivo Using Radioactive Tracer Techniques

ORIG. REF'S:	VOL.	PP.	DATE	ABSTR. REF'S:	VOL.	PP.	DATE
Environ. Res.	4	558-570	Dec. 1971				

ABSTRACT:

Studies of the Solubility of Constituents of Chrysotile Asbestos in Vivo Using Radioactive Tracer Techniques. A. Morgan, A. Holmes and C. Gold. Environ. Res. 4: 558-570. December 1971

Radioactive tracer techniques were used to study the solubility of certain minor constituents (iron, chromium, cobalt and scandium) of chrysotile asbestos following administration to rats by intrapleural injection. For chrysotiles in which the cobalt substitutes magnesium in the brucite layer, the excretion of cobalt-60 can be used to measure the rate at which structural magnesium dissolves in vivo. The distribution of asbestos in the thoracic cavity was determined from measurements of the associated radioactivity. Similar measurements showed that in the case of one particular chrysotile, a significant fraction of the administered asbestos had migrated to the liver. Additional experiments were performed with this material and examination of the relevant tissues by electron microscopy confirmed that migration to the dome of the liver occurred via adjacent diaphragmatic lesions. 12 references.

--Authors' abst.

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AUTHOR T. Beritic, et al.

TITLE Asbestos and Ferruginous Bodies

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Arh. Hig. Rada	22 (4)	317-322	1971				

ABSTRACT

Asbestos body-like structures ("ferruginous bodies") found in some of the smears prepared from lungs of 450 consecutive necropsies in Zagreb were studied with particular reference to the morphological features of the iron-staining reaction of ferruginous coating. From this study it appears that there are no differences in iron staining properties of the coating which would serve to distinguish between ferruginous bodies of asbestotic and those of nonasbestotic origin. The colour pictures of the unstained (native) and the corresponding stained ferruginous bodies are presented.

--Authors' abst.

MEDICAL INSTITUTE, PITTSBURGH, PA.

DATE EXAMINED BY PURPOSE OF SEARCH CONT'D

1/72		68	752

AUTHOR: H. Nizze

TITLE: Frequency of Socalled Asbestos Bodies in Human Lungs

ORIG. REF'S:	VOL.	PP.	DATE	ABSTR. REF'S.	VOL.	PP.	DATE
Intern. Arch. Arbeitsmed.	28	71-82	1971	Air Poll. Abst's.		13947	Oct. 1971

ABSTRACT:

Frequency of Socalled Asbestos Bodies in Human Lungs. H. Nizze. Intern. Arch. Arbeitsmed. 28: 71-82. 1971

Lung tissue obtained by necropsy from 234 men and women aged 30 to 88 years old was examined for the occurrence of so-called asbestos bodies. In only 22 cases typical asbestos bodies were found. The quantity of asbestos bodies was calculated and was about 1600 to 1800/gram dried lung tissue in the positive cases. In the preserved lung tissue of a 58-year-old man, the only case of asbestosis among 22,562 consecutive necropsies, nearly 100,000 to 120,000 so-called asbestos bodies were found. In the lungs of necropsies coming from the vicinity of asbestos mines, much higher quantities of asbestos bodies were found than in material coming from rural areas. Comparison with the necroscopy data on asbestos bodies in lungs found in the literature reveals a great variation, which may be due to the different economical structure of the examined district and to different examination methods. Attention is given to the fact that morphologically identical asbestos bodies can also be induced by inhalation of filamentous materials other than asbestos. 56 references. --Air Pollution Abstracts

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FORM 77 10M 4-66

CLASSIFIED SUBJECT

FELLOWSHIP NUMBER

FILE NUMBER 752

AUTHOR: Davis, J. M. G.

TITLE:

ORIG REFS:

VOL. PP. DATE

ABSTRACT:

97. DAVIS, J. M. G. (Dep. Pathol., Cambridge Univ., Cambridge, Engl., UK.) Epithelial outgrowths from lung tissue following intrapleural injection of asbestos dust in experimental animals. INT J CANCER 7(2): 238-245. Illus. 1971. [Fr. sum.]--After the intrapleural injection of asbestos dust in experimental animals, granulomas were produced and large areas of the pleural surface became thickened with fibrous tissue. In guinea-pigs injected with chrysotile dust, alveolar epithelial cells often migrated through the lung surface and were found lining spaces in the areas of pleural fibrosis. Initially these cells exhibited the exact structure of the surfactin-secreting type of alveolar cell, but later many of the cells lost the surfactin granules from their cytoplasm and became ciliated. In some animals cystic formation occurred in the lung tissue and groups of cysts grew out from the lung to invade the areas of pleural fibrosis. These cysts were also lined with surfactin-secreting alveolar cells. The possible association of these epithelial outgrowths and the well-known difficulties of diagnosing pleural mesotheliomas are discussed.

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CLASSIFIED SUBJECT	FELLOWSHIP NUMBER	FILE NUMBER
9/71		752

AUTHOR K. Ahlman and E. Siltanen

TITLE Exposure of insulation workers to asbestos dust

ORIG. REFR.	VOL.	PP.	DATE	ABSTR. REFR.	VOL.	PP.	DATE
Work. Environ-Health	(8) (1)	1-5	1971				

EXPOSURE OF INSULATION WORKERS TO ASBESTOS DUST. K. Ahlman and E. Siltanen. *Work-Environ-Health 8: (1) 1-5, 1971*

It has been shown that there is a highly increased risk of lung cancer occurring in persons exposed to dusts containing asbestos in insulation work. The Institute of Occupational Health carried out a field investigation in 1962-1963 which included all actively working laggers in the three largest Finnish cities. This investigation was continued after an interval of a few years. The total number of workers examined during the period 1962 through 1968 was 452, nearly three-fourths of all insulators still working in this country. In spite of these examinations, no reliable, current data regarding the true incidence of lagger's pneumoconiosis are available, and even less is known concerning the morbidity of former years. Work producing the hazardous dust has been performed in this country for several decades. According to the newly revised law relating to the safety of working environments, however, all workers must nowadays submit to a periodical examination at least once every 3 years. The main criterion for accepting a case as asbestosis was the presence of typical radiological manifestations in the lungs, such as interstitial or focal fibrosis, especially in the middle or lower areas. This was not regarded as sufficient for diagnosis, however, unless it was clearly proved that the patient had a sufficiently long duration of exposure. Pleural calcifications or thickenings as the only noticeable radiological findings, without a

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typical occupational history, were not enough to classify the case as anything but suspected asbestosis. According to American findings concerning asbestos dust particle concentration, a threshold limit of 175 particles per cubic centimeter (= 5 mppcf) has been recommended as a ceiling value below which all concentrations should fluctuate, and a threshold limit of 70 particles per cubic centimeter (=2 mppcf) has been recommended as a time-weighted average concentration as counted by the impinger light-field count technique. The same values have also been recommended in Finland. --Cond. from text

CLASSIFIED SUBJECT		FELLOWSHIP NUMBER	FILE NUMBER
	4/72	47	752

AUTHOR Sub-Committee on Asbestosis

TITLE Evaluation of Asbestos Exposures in the Working Environment

ORIG. REFS	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Ind. Med. Surg.	41	28-30	Jan. 1972				

ABSTRACT

Evaluation of Asbestos Exposures in the Working Environment. Sub-Committee on Asbestosis of the Permanent Commission and International Association on Occupational Health. Ind. Med. Surg. 41: 28-30, January 1972

The Sub-Committee on Asbestosis of the Permanent Commission and International Association on Occupational Health recommended procedures for collecting, enumerating, and characterizing respirable asbestos fibers in the working environment on the following: fiber exposure evaluation procedures; chemical characterization of fibers; physical characterization of fibers; and alternative exposure evaluation procedures. --Cond. from text

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		NUMBER	FILE NUMBER
12/72		1-1/	752

AUTHOR W. B. Reitze, et al.

TITLE Application of Sprayed Inorganic Fiber Containing Asbestos: Occupational Health Hazards

ORIG. REF'S:	VOL.	PP.	DATE	ABBR. REF'S:	VOL.	PP.	DATE
Am. Ind. Hyg. Assn. J.	33	178-191	March 1972				

ABSTRACT:

1316 Application of Sprayed Inorganic Fiber Containing Asbestos: Occupational Health Hazards. W. B. Reitze, et al. Am. Ind. Hyg. Assn. J. 33: 178-191, March 1972

Over 40,000 tons of inorganic fibrous insulation containing asbestos were used in 1970 by the construction industry as a fireproofing material in the erection of multistoried buildings. The application of this material by a spraying technique produces serious contamination of the working environment. Asbestos fiber concentrations may range from 30 f/cc to more than 100 f/cc. Some early observations of the exposures and health of the workmen in this comparatively new occupation are given with photographs of the working areas. Nearby workers may be indirectly exposed. Such concentrations were found to be 70 f/cc ten feet from the spraying and 46 f/cc seventy-five feet away. Control measures are discussed. --Authors' abst.

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FORM 77 10M 4-6

		NUMBER	FILE NUMBER
	6/72	/	752

AUTHOR G. W. Gibbs and M. Lachance

TITLE Dust Exposure in the Chrysotile Asbestos Mines and Mills of Quebec

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Arch. Environ. Health	24	189-197	March 1972				

Dust Exposure in the Chrysotile Asbestos Mines and Mills of Quebec. G. W. Gibbs and M. Lachance. Arch. Environ. Health 24: 189-197, March 1972

Past and present features of the Quebec chrysotile mining and milling environment and methods used to establish indices of exposure for epidemiological studies are described. Environmental dust concentrations used for calculation of dust exposure indices were derived mainly from systematic midget-impinger samples taken since 1948, and from field surveys made in 1968, using impinger and a variety of other techniques. Though dust levels within the industry fluctuated widely, there was a steady fall from an average of approximately 75 million particles per cubic foot (MPCF) in 1918 to less than 10 MPCF in 1968. Considerable variation in the fiber content of airborne dust in this industry suggests that any safety standard should probably take account of fibrous and non-fibrous components. 27 references. --Authors' abst.

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FORM 77 10M 4-64

CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	9/72		J-5	752

AUTHOR: Anon.

TITLE: Inhalation of Low Concentrations of Asbestos

ORIG. REFS	VOL.	PP	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Med. J. Austral	1	839-840	April 22, 1972				

ABSTRACT

Inhalation of Low Concentrations of Asbestos. Anon. Med. J. Austral. 1: 839-840, April 22, 1972

New uses for asbestos in industry are constantly being found with the result that many workers may be exposed to low concentrations of asbestos unknown to them or their doctors. This has been investigated in shipyard pipe coverers. At the same time, an evaluation was made of the methods of detecting asbestosis at the earliest possible stage and also of the safety of the recommended threshold limit value of 5 million particles of asbestos per cubic foot of air (MPPCF). The authors conclude that the assessment of the prevalence of asbestosis in workers is difficult because the length of exposure necessary for the development of the disease is long (at least 10 years at moderate levels of dust exposure), and because in most trades in which the hazard exists the levels of exposure vary widely according to workshop practice. However, prevalence increased with the age of the workers and with duration of exposure. Prolonged exposure to dust concentrations which exceed only marginally the accepted threshold level appears to be hazardous. --Cond. from text

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AUTHOR D. C. Braun and R. T. P. deTreville

TITLE Comment on McDonald et al's Study on Mortality in Asbestos Industry

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Arch. Environ. Health	24	294	April 1972				

ABSTRACT

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CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	8/72		9[illegible]	752

AUTHOR: M. L. Newhouse, et al.

TITLE: A Study of the Mortality of Female Asbestos Workers

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Brit. J. Ind. Med.	29	134-141	April 1972				

A Study of the Mortality of Female Asbestos Workers. M. L. Newhouse, et al. Brit. J. Ind. Med. 29: 134-141, April 1972

A cohort study of over 900 women employed at an asbestos factory making both textiles and insulation materials is described. It extends the information about asbestos-related disease at this factory which was previously available only for male workers. The cohort was defined as all the women who started employment at the factory between 1936 and 1942 and the main analysis was of mortality up to the end of 1968. This analysis was made in relation to job, length of exposure, and age at first exposure. Compared with national rates there was excess overall mortality among those who worked in jobs with low to moderate exposure partly accounted for by deaths from cancer. In the group with severe exposure, who had worked in the factory for less than two years, there was an excess of cancer of the lung and pleura. However, the most marked increased mortality was in those with severe exposure who had worked for more than two years in the factory; in this group there were excess deaths from cancer of the lung and pleura, from other cancers, and from respiratory diseases. There were no significant trends of excess mortality with age at first exposure. The smoking habits of some of the deceased women were obtained and the indications were that the proportion of smokers in the cohort was higher than the national rate. This could account for some of the excess mortality but the trend of this excess with exposure indicated the role of asbestos. Necropsy reports and/or histological material were obtained for 43% of those who had died. Three deaths registered as cancer of the pleura were identified as pleural mesothelial tumours; in all there were 11 mesotheliomas, six of pleural and five of peritoneal origin. 32 references. --Authors' abst.

MELLON INSTITUTE, PITTSBURGH, PA.

CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	8/72		850	752

AUTHOR: J. C. McDonald, et al.

TITLE: Respiratory Symptoms in Chrysotile Asbestos Mine and Mill Workers of Quebec

ORIG. REFS:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Arch. Environ. Health	24	358-363	May 1972				

ABSTRACT:

Respiratory Symptoms in Chrysotile Asbestos Mine and Mill Workers of Quebec. J. C. McDonald, et al. Arch. Environ. Health 24: 358-363, May 1972

A Standard questionnaire was administered to an age-stratified random sample of 1,015 current male employees in the Quebec chrysotile asbestos mines and mills. The prevalence of persistent cough and phlegm (bronchitis) was related to age and smoking habits and perhaps, in nonsmokers and light smokers, also to dust exposure. Breathlessness on exercise was related to age and dust exposure but not to smoking. 13 references. --Authors' abst.

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FORM 77 10M 4-64

CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	9/72		9 21	752

AUTHOR: Margaret R. Becklake, et al.

TITLE: Lung Function in Chrysotile Asbestos Mine and Mill Workers of Quebec

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Arch. Environ. Health	24	401-409	June 1972				

ABSTRACT:

Lung Function in Chrysotile Asbestos Mine and Mill Workers of Quebec. Margaret R. Becklake, et al. Arch. Environ. Health 24: 401-409, June 1972

Lung function tests were carried out on an age-stratified random sample of 1,015 Quebec asbestos workers whose dust exposure had been estimated from their work history and available dust levels in the industry. In nonsmokers, several function tests distinguished the lower two dust-exposure groups. These were inspiratory capacity, forced vital capacity, and forced expiratory volume in 0.75 second and in 1.0 second. In smokers the same tests were somewhat less sensitive. Any of the tests mentioned appear to be suitable for health surveillance of asbestos-exposed workers, whatever their smoking habits. 15 references. --Authors' abst.

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MEDICAL INSTITUTE, PITTSBURGH, PA.
FORM 27 10M 4-44

CLASSIFIED SUBJECT		FELLOWSHIP NUMBER	FILE NUMBER
	9/72		752

AUTHOR C. E. Rossiter, et al.

TITLE Radiographic Changes in Chrysotile Asbestos Mine and Mill Workers of Quebec

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Arch. Environ. Health	24	388-400	June 1972				

ABSTRACT

Radiographic Changes in Chrysotile Asbestos Mine and Mill Workers of Quebec. C. E. Rossiter, et al. Arch. Environ. Health 24: 388-400, June 1972

Radiographic changes in 13,021 employees were assessed in 6,529 men aged 36 to 65. The prevalence of rounded small opacities (category 1/0 or more) rose with increasing dust exposure from 0.5% to 3.4%; that of irregular small opacities (category 1/0 or more), from 2.2% to 17.0%; and that of pleural thickening (grade 1 or more), from 1.4% to 12.3%. Small opacities or pleural changes were seen in 17% of men, but 3.2% had both. At present dust exposure levels, much lower rates can be expected. The prevalence of radiologic changes was higher in the Thetford Mines area than in the Asbestos area. This was shown by pleural changes more than parenchymal changes, and the difference was extreme with pleural calcification which was common in Thetford Mines but virtually absent in Asbestos. 18 references. --Authors' abst.

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CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	10/72			752

AUTHOR M. Navratil and F. Trippe

TITLE Prevalence of Pleural Calcification in Persons Exposed to Asbestos Dust and in the General Population in the Same District

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Environ. Res.	5	210-216	June 1972				

ABSTRACT:

Prevalence of Pleural Calcification in Persons Exposed to Asbestos Dust, and in the General Population in the Same District. M. Navratil and F. Trippe. Environ. Res. 5: 210-216, June 1972

It is of interest whether pleural calcification is primarily the result of long years of exposure to asbestos dust or whether there are factors other than exposure to dust. Persons working for a long period in a plant processing asbestos products (chrysotile), persons without occupational exposure to dust but living in the vicinity of the plant, and consanguineous relations of patients with pleural calcifications were investigated. The authors also studied a large population above the age of 40, in the district in which the plant is situated. Comparison of the groups disclosed that prevalence of pleural calcifications was closely related to opportunity for exposure to asbestos dust either occupationally or by family or neighborhood contact, as contrasted with the unexposed population. The prevalence in the group with direct or indirect asbestos exposure was 5.3, 5.8, 3.5%; whereas in the unexposed population it was 0.34%. These results indicate that asbestos is primarily responsible for pleural findings, but that some pleural disease may be the result of the other factors, still not known. The identification of other causes is hampered by the long period which need elapse from the onset of the process to the radiological appearance of the pleural change. 21 references. --Authors' abst. modified

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FORM 77 10M 4-64

CLASSIFIED SUBJECT		NUMBER	
	12/72		752

AUTHOR E. G. Beck, P. F. Holt and N. Manojlovic

TITLE: Comparison of Effects on Macrophage Cultures of Glass Fibre, Glass Powder, and Chrysotile Asbestos

ORIG. REFS:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Brit. J. Ind. Med.	29	280-286	July 1972				

ABSTRACT:

1350 Comparison of Effects on Macrophage Cultures of Glass Fibre, Glass Powder, and Chrysotile Asbestos. E. G. Beck, P. F. Holt and N. Manojlovic. Brit. J. Ind. Med. 29: 280-286, July 1972

The effects on macrophage cultures of glass fibre, glass powder, and chrysotile asbestos are compared. Glass fibre behaves like chrysotile in producing an increase in cell membrane permeability in cultured macrophages. This is demonstrable by the increase in lactic dehydrogenase activity in the supernatant fluid. The metabolism, measured by lactate production, is not reduced as it is when quartz is phagocytosed. Glass powder behaves like the inert dust corundum, producing little change in the number of cells stained by erythrosin B and a small increase in lactate dehydrogenase activity, both being in the range of the control. There is an increase in lactate production as a result of higher metabolism due to phagocytosis. Dusts may produce two basic effects, namely a toxic effect and change in cell membrane permeability. A non-specific effect on the cell membrane due to the slow and sometimes incomplete process of ingestion of long fibres is probably a function of the morphology, particularly the length of the fibres. A primary specific effect induced by some dusts immediately follows contact with the cell membrane. 9 references. --Authors' abst.

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MELLON INSTITUTE, PITTSBURGH, PA.

CLASSIFIED SUBJECT		FELLOWSHIP NUMBER	FILE NUMBER
10/72			752

AUTHOR: I. J. Selikoff, W. J. Nicholson and A. M. Langer

TITLE: Asbestos Air Pollution

ORIG. REFS:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Arch. Environ. Health	25	1-13	July 1972				

ABSTRACT:

Asbestos Air Pollution. I. J. Selikoff, W. J. Nicholson and A. M. Langer. Arch. Environ. Health 25: 1-13. July 1972

Findings of mesothelioma among individuals living in the vicinity of asbestos plants suggested that asbestos air pollution might occur. Measurement of asbestos (chrysotile) content of ambient air in New York City and other locations showed levels of 10 to 50 x 10^{-9} gm/cu m, and lungs of New York residents examined at autopsy regularly showed chrysotile fibrils. Occurrence of asbestos air pollution is now established. What have not yet been defined, however, are the dimensions of disease hazard which may be associated. Epidemiological considerations suggest that it is improper to equate the several kinds of asbestos exposure: direct occupational, indirect occupational, exposure in family circumstances, neighborhood contamination, and general community asbestos air pollution. Since most urban air pollution is derived from commercial and industrial sources, the asbestos industry has both important responsibility and opportunity for its control. 38 references. --Authors' abst.

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CLASSIFIED SUBJECT		FELLOWSHIP NUMBER	FILE NUMBER
	12/72		752

AUTHOR P. G. Harries, et al.

TITLE Radiological Survey of Men Exposed to Asbestos in Naval Dockyards

ORIG. REFR.	VOL.	PP.	DATE	ABSTR. REFR.	VOL.	PP.	DATE
Brit. J. Ind. Med.	29	274-279	July 1972				

ABSTRACT.

1347 Radiological Survey of Men Exposed to Asbestos in Naval Dockyards. P. G. Harries, et al. Brit. J. Ind. Med. 29: 274-279, July 1972

Asbestos related abnormalities were found in 3% of a 10% sample population in radiological surveys of the naval dockyards at Portsmouth, Chatham, and Rosyth. The prevalence of these abnormalities was related to the type of occupation and duration of exposure to asbestos. The results confirm the findings of an earlier survey at Devonport dockyard. No association between smoking, or the amount smoked, and the incidence of parenchymal or pleural disease due to asbestos was detected. Pleural abnormalities were found 10 times more frequently than parenchymal disease, and concern is felt over the uncertainty of the prognosis in men with pleural abnormalities, especially as 37 men have developed pleural mesothelioma at Devonport since 1965. More work is required to establish the true significance of pleural abnormalities caused by asbestos and to explore possible methods of treatment. 12 references.
--Authors' abst.

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MELLON INSTITUTE, PITTSBURGH, PA.

CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	10/72		1075	752

AUTHOR: W. J. Nicholson, C. J. Maggiore, I. J. Selikoff

TITLE: Asbessos Contamination of Parenteral Drugs

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Science	177	171-173	July 14, 1972				

ABSTRACT:

Asbestos Contamination of Parenteral Drugs. W. J. Nicholson, C. J. Maggiore, I. J. Selikoff. Science 177: 171-173, July 14, 1972

Appropriate filtration procedures for sterilization and removal of foreign matter from parenteral solutions became necessary several decades ago. The pharmaceutical industry found asbestos filters useful and effective for this purpose, and they have become widely used. Unfortunately, such filters add a contamination of their own to the filtrate and, at least in the past 3 years, parenteral solutions used for intravenous, intramuscular, and intraperitoneal therapy in the United States have often contained measurable amounts of asbestos. The drugs sampled represent only a small fraction of those on the market. On the other hand, the finding of asbestos in one third of the single vials that were examined in this investigation over a 1-year period indicates significant asbestos contamination of some parenteral drugs at this time. 13 references. --Cond. from text

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Industrial Health Foundation, Pittsburgh, Pa.

Digest Date	Digest Number	FILE NUMBER
6/73	4	752

AUTHOR G.F. Rubino and G. Scansetti

TITLE Epidemiological Studies on Asbestosis in the Asbestos Manufacture Industry

ORIG. REFS	VOL.	PP.	DATE	ABSTR. REFS	VOL.	PP.	DATE
Med. Lavoro	63	282-298	Jul./Aug. 1972 (Ital.)				

ABSTRACT This study concerns 635 subjects exposed to the risk of asbestosis in the three principal manufacture sections of Piedmont: asbestos-cement, friction materials for car brakes and clutches, textiles. About two thirds of the subjects examined had presented a claim for assessment of occupational disease, the remainder had been dismissed from the factories for different reasons. The clinical, radiological and functional data were analyzed both for sections and for decades of exposure time, and for type of work: this last considered, for the sake of simplicity and in each section, as working phase, respectively initial, intermediate or final of the entire working cycle. The chest X-rays were classified according to the "extended" scheme of BIT (1968). More than one half of the cases presented a radiological type of opacity "s", a little more than 10% a type "t", while about one third of the cases did not present radiological lung changes diagnostic for asbestosis. The time of exposure necessary for the appearance of opacities "s" or "t" was much shorter for the textile workers than for the workers of the other two sections. The same was true for the workers engaged in the initial working phases, compared to those engaged in the intermediate and final phases; moreover, for the same exposure time, the workers of the initial (over)

phases showed a more diffuse pattern than the workers of the intermediate and especially of the final phases. The pleural alterations (thickening and pleural calcifications) were considered only in the subjects with no history of other diseases which can usually produce pleural changes. Pleural alterations were found in more than one fifth of all the subjects investigated, ir e fourth if one considered only the textile workers, where the incidence was higher a... the appearance was more precocious; an early occurrence was observed also for the subjects engaged in the initial working phases in general. The most frequent change was the parietal thickening, followed by the costo-phrenic obliteration, the diaphragmatic calcifications and the parietal calcifications. The first two types of change were prevalent in the workers of the initial working phases, the calcifications in the workers of the final ones. The calcifications seemed to be more related to the duration of exposure and to the time from first exposure, than to the severity of exposure. As functional parameters, only the vital capacity and VEMS, as percentages of the standard values established by CECA, were taken into consideration. Particularly a correlation has been observed between decreased parameters and working phase and manufacture section; with similar X-ray patterns or duration of exposure, the decrease was was significantly greater for workers of the initial phases, and respectively, among textile workers. For the same type of radiological lesion, the lesser or greater degree of opacity diffusion was paralleled both by vital capacity and by VEMS; the lesser or greater ext sion was paralleled mostly by VEMS. The relative rarity of right heart impairment, at least at ECG, was confirmed; only 2-3% cases showed a "pulmonale" P wave or changes of right intraventricular conduction. The importance and also the frequent occurrence of asbestosis among workers of asbestos-cement is emphasized. Finally it is remarked that from the point of view of insurance, the assessment of a compensable disablement seems often to prescind from the working phase in which the subject had been engaged; this is in contrast both with the logical expectancy and with the data presented, which on the contrary point to a progressive decrease of the risk from the initial to the final phases of the working cycle. --Authors' abst. in English

Industrial Health Foundation, Pittsburgh, Pa.

Digest Date	Digest Number	File Number
6/73	27	752

AUTHOR E. Sartorelli, et al.

TITLE Respiratory Physiopathology of Asbestosis

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Med. Lavoro	63	269-281	Jul/Aug. 1972 (Ital.)				

ABSTRACT

A study of the respiratory function was carried out in 724 male subjects exposed to inhalation of asbestos dust (workers of a mining company of chrysotile in Piedmont; insulators; workers engaged in the production of asbestos-cement, of asbestos textiles or of car brakes and friction clutch discs). In all subjects the vital capacity, VEMS and D_{LCO} at rest (steady state method) were determined. In some cases the residual volume was measured, the resistances of the airways (body plethysmography), of respiratory dead space, of arterio-al-veolar CO_2 gradient and also of D_{LCO} at work on a cycloergometer. The subjects were subdivided into 5 groups on the basis of the chest X-ray pattern (UICC classification, Cincinnati): 1st group with X-ray pattern 0/0 or 0/1 and with asbestos exposure less than 10 years (average exposure 5.7 years); 2nd group with X-ray pattern 0/0 or 0/1 and with asbestos exposure longer than 10 years (average exposure 21.2 years); 3rd group with X-rays 1/0 or 1/1; 4th group with X-rays 1/2, 2/1 or 2/2; 5th group with X-rays 2/3, 3/2 or 3/3. The results obtained can be summarized as follows. A ventilation insufficiency restrictive in type was (over)

observed in 5.6% subjects of the 1st group, in 10.1% subjects of the 2nd group and in 31.1%, 41.9% and 69.2% subjects of the 3rd, 4th and 5th group respectively. The finding of a ventilation insufficiency restrictive in type in a non-neglectable percentage of subjects exposed to asbestos but with chest X-ray findings normal or dubious, seems to indicate the existence in these cases of pulmonary lesions still not detectable radiologically, but that nonetheless have already determined a change in lung elasticity. A ventilatory insufficiency obstructive in type, due to chronic bronchitis with or without lung emphysema, was observed in percentages varying from 11.2% to 24.2% according to the group considered. In subjects with a chest X-ray pattern diagnostic of a severe asbestosis, evident changes of the rate ventilation/perfusion (increased respiratory dead space and a-A CO_2 gradient) were often present. A reduction of D_{LCO} at rest and/or at work, below the lowest normal limits (defined from the study of 91 normal male subjects), was observed in 4.6 to 6.4% subjects of the 1st group, in 9.6 to 19.2% subjects of the second group and in percentage higher than 20% (up to 100%) in the subjects of the 3rd, 4th, and 5th group. The finding of pathological values of D_{LCO} both at rest and at work, in a certain number of subjects exposed to asbestos, but with radiological changes or with X-ray changes insufficient for a clear-cut diagnosis of asbestosis, indicated that the pulmonary lesions induced by asbestos can determine evident functional changes of the alveolar-capillary gas exchanges also in a pre-radiological phase. In conclusion, the study of the respiratory function in workers exposed to asbestos offers useful data not only for an evaluation of the functional damage present in the subjects with an asbestosis evident at X-rays, but also for an early diagnosis, and therefore for the prevention of asbestotic pneumoconiosis.

--Authors' abst. in English

Industrial Health Foundation, Pittsburgh, Pa.

	Digest Date	Digest Number	FILE NUMBER
	8/73		752

AUTHOR: K. Koshi and H. Sakabe

TITLE: Effect of Asbestos Dusts on the Cultured Macrophages

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Ind. Health	10	16-23	Aug. 1972				

ABSTRACT:

Experiments were performed in order to investigate the cellular damage when asbestos particles were added to rat peritoneal macrophages in vitro. At short time after the addition of naked chrysotile, amosite or crocidolite to the cell culture the considerable amounts of lactic dehydrogenase (LDH) were released into the medium lacking serum and the content of acid soluble nucleotide in the cells decreased. Also C^{14}-leucine incorporation into the cell protein was decreased by the addition of chrysotile, crocidolite or amosite. Naked crocidolite and amosite decreased the lactic acid production after 24 hr incubation. But, when serum coated chrysotile, crocidolite or amosite were added to the macrophages the lactic dehydrogenase in the medium increased in small amount only after more prolonged incubation. Serum coated asbestos had no effect on the lactic acid production and C^{14}-leucine uptake into cell protein of macrophages in the medium lacking serum, nor naked asbestos had any effect in the medium containing serum. --Authors' abst.

CLASSIFIED SUBJECT		FELLOWSHIP NUMBER	FILE NUMBER
	5/73		752

AUTHOR K. Koetzing

TITLE Medical Colloquium of the Professional Association of the Ceramic and Glass Industry 23 October 1971, at Bad Reichenhall

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Staub Reinhalt. Luft	32	28-29	Aug. 1972				

ABSTRACT The following papers were read: 1. H. Bohlig: X-ray-diagnostic problems in the supervision of persons exposed to asbestos dust; 2. E. Hain: Topical problems of exposure to asbestos (technology, diagnosis, clinic, epidemiology); 3. E. Hain: Occupational malignomas in the thoracic region; 4. H. Otto: Asbestosis and occupational carcinomas, viewed from the standpoint of pathological anatomy. In the first paper H. Bohlig pointed out that asbestos cement cannot be considered harmless. Asbestos dust, asbestos fibers, or both constitute a hazard. It is to be assumed that at least 20 years are necessary for chaliocotic plaques to develop. Interesting and impressive examples of faulty radiographs were presented. In X-raying, it is not advisable to use screen images for the early detection of pathological changes in the lungs, and they are even to be rejected where early detection of asbestosis is involved. Hard rays provide far better information. Reference is made to the new classification

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DATE EXAMINED: BY: PURPOSE OF SEARCH:

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coniosis by the International Labor Organization (ILO) in Geneva (International Classification of Radiographs of Pneumoconiosis). In the second paper, E. Hain reported that asbestos plays a part in the anamnesis of 60 to 70% of mesotheliomas. Because of its particular noxiousness, crocidolite should no longer be used. In the third paper, E. Hain expressed the opinion that nickel cancer of the thoracic organs does not exist. Iron is not considered perfectly harmless. Scars in the lungs may constitute a basis for carcinoma development. E. Hain's explanations are based on vast material on asbestoses in the Hamburg basin, carefully collected and evaluated for many years. In the fourth paper H. Otto reported that on the basis of pathological and anatomical data concerning silicoses with earning ability reduced by more than 50%, a causal correlation with lung carcinoma (bronchial carcinoma) is to be assumed. From the practice of handling crocidolite-kimberlite, it was found that an average of 25 years is necessary for asbestosis mesothelioma to develop. The lecturer stressed that, in the detection of asbestoses in correlation with lung cancer or mesothelioma, the darkness index plays an important role. --Cond. from text

Industrial Health Foundation, Pittsburgh, Pa.

	Digest Date	Digest Number	FILE NUMBER
5/73			753

AUTHOR K. Koetzine

TITLE Medical Colloquium of the Professional Association of the Ceramic and Glass Industry 32 October 1971, at Bad Reichenhall

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Staub Reinhalt. Luft	32	28-29	Aug. 1972				

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CLASSIFIED SUBJECT		FELLOWSHIP NUMBER	FILE NUMBER
12/72		1 . . 7	752

AUTHOR D. Magner and Alison D. McDonald

TITLE Malignant Mesothelial Tumors - Histologic Type and Asbestos Exposure

ORIG. REFS	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
New Engl. J. Med	287	570-571	Sept. 14, 1972		-		

ABSTRACT:

1349 Malignant Mesothelial Tumors - Histologic Type and Asbestos Exposure. D. Magner and Alison D. McDonald. New Engl. J. Med. 287: 570-571, September 14, 1972

Primary mesothelial tumors may not easily be distinguished from metastatic tumors histologically, and, for assured diagnosis, full autopsy to eliminate other primary tumors has been advocated. In keeping with the multipotentiality of mesothelial cells, the histologic pattern of mesotheliomas is variable. Three histologic types have been described - epithelial, mesenchymal and mixed. The findings suggest that mixed mesothelial tumors were specially associated with asbestos exposure. If confirmed, this observation would help differentiate asbestos-related tumors from others of unknown etiology. 12 references.

--Cond. from text

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MELLON INSTITUTE, PITTSBURGH, PA.

CLASSIFIED SUBJECT		FELLOWSHIP NUMBER	FILE NUMBER
	11/72		752

AUTHOR: A. L. Rickards

TITLE: Estimation of Trace Amounts of Chrysotile Asbestos by X-Ray Diffraction

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Anal. Chem.	44	1872-1873	Sept. 1972				

ABSTRACT:

Estimation of Trace Amounts of Chrysotile Asbestos by X-Ray Diffraction. A. L. Rickards. Anal. Chem. 44: 1872-1873, September 1972

X-ray diffraction techniques have been used for both qualitative identification and quantitative determination of different types of asbestos minerals, notably chrysotile, crocidolite, and amosite. A method has been described based on the measurement of the area under a primary diffraction peak and comparison with an external calibration curve, to measure quantities of chrysotile in the 1-10 mg range. In the course of a detailed study of the chrysotile content of urban atmospheres, it became necessary to develop more sensitive techniques. It is the purpose of this paper to show that with suitable equipment and experimental precautions, the X-ray technique can be extended to detect much smaller quantities, of the order of 10 μg on membrane filters, when no gross interferences are present. Even when interference is present, the changes in intensity of a chrysotile diffraction peak as a result of known additions of chrysotile to the sample, relative to the intensity of an unknown line, can be used to detect amounts of 50-100 μg. --Author's abst.

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FORM 7:

CLASSIFIED SUBJECT		FELLOWSHIP NUMBER	FILE NUMBER
	11/72		752

AUTHOR I. J. Selikoff, C. Hammond and J. Churg

TITLE Carcinogenicity of Amosite Asbestos

ORIG. REFS:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Arch. Environ. Health	25	183-186	Sept. 1972				

ABSTRACT

Carcinogenicity of Amosite Asbestos. I. J. Selikoff, E. C. Hammond, and J. Churg. Arch. Environ. Health 25: 183-186, September 1972

Few data exist concerning the comparative neoplastic potential in man of the several kinds of asbestos. In particular, there has been no evidence concerning whether the amosite variety is carcinogenic. The matter is of practical importance, since amosite use in the United States has sharply increased. The mortality experience of a group of 230 men previously employed in an amosite asbestos factory was studied during the years 1960 through 1971. Total deaths were more than twice the number anticipated: 46.1 were expected, and 105 occurred. Some 14 deaths were due to asbestosis. Both lung cancer and mesothelioma were found in considerable excess. Two or three deaths from lung cancer were expected, and 35 occurred. There were five deaths from mesothelioma. Occupational exposure to amosite asbestos can be associated with serious cancer hazard; its continued industrial use requires rigorous control. 15 references. --Authors' abst.

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CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	12/72		13/4	752

AUTHOR: R. L. H. Murphy, et al.

TITLE: Low Exposure to Asbestos: Gas Exchange in Ship Pipe Coverers and Controls

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Arch. Environ. Health	25	253-264	Oct. 1972				

ABSTRACT:

1348 Low Exposure to Asbestos: Gas Exchange in Ship Pipe Coverers and Controls. R. L. H. Murphy, et al. Arch. Environ. Health 25: 253-264, October 1972

In a previous survey of shipyard pipe coverers and controls, clinical criteria were used to define pulmonary asbestosis. This second survey focused on physiologic abnormalities. Pipe coverers had significantly reduced vital capacities (FVC) as well as single breath (D_LSB) and exercise steady state (D_LSS-Ex) diffusing capacities. Resting steady state diffusing capacity (D_LSS-R), fraction carbon monoxide removed (F_CO), and the diffusing constant (K) differed from selected normals but not from all controls. Airways resistance, specific conductance, minute ventilation, arterial carbon dioxide pressure (P_{CO_2}) and dead space were not significantly abnormal. Obstructive disease was equally common in both groups. All workers with clinical "asbestosis" also had severely reduced D_L and F_CO. The significance of isolated reduction of D_L requires further study. However, in a third survey three years later, D_L in exposed workers had deteriorated more rapidly than FVC; some with initially isolated reduction of D_L had developed other signs of disease. 41 references. --Authors' abst.

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CLASSIFIED SUBJECT		FELLOWSHIP NUMBER	FILE NUMBER
	12/72		752

AUTHOR: P. Gross, et al.

TITLE: Asbestos: Identification of Fibrous Particles in Lungs

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
J. Occ. Med.	14	757-759	Oct. 1972				

ABSTRACT:

1345 Asbestos: Identification of Fibrous Particles in Lungs.* P. Gross, et al. J. Occ. Med. 14: 757-759. October 1972

Because of proven nonspecificity, ferruginous bodies are not necessarily indicative of inhaled asbestos fibers. Of the methods useful in identifying asbestos fibers, electron diffraction and microprobe analysis, while more definitive, have proved excessively laborious and expensive. A newly developed, rapid screening method for asbestos vs nonasbestos fibers has proved to be practical and economical. In addition, with this method the form of asbestos, chrysotile, which represents 95% of the asbestos used in this country, can be identified; it is recognized readily by the unique tubular structure of its fibrillar

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units. Besides asbestos, inorganic fibers found in human lungs may consist of glass, rock wool, or ceramic aluminum silicate. Fibrous fragments of diatoms have also been identified. The ashes of plants and their derivatives - leaves, wood, paper, and coal - contain mineral fibers of respirable size which find their way into and remain in the lungs. Methods of quantitating the fibers in lung sediments are described and results in a small series of lungs are summarized. On the average, 75% of all fibers were shorter than 5 μ m and about 14% of the short fibers were chrysotile. The biological significance of the asbestos content in lungs of people not occupationally exposed to asbestos is briefly discussed. 13 references. --Authors' summary modified

CLASSIFIED SUBJECT			FELLOWSHIP NUMBER	FILE NUMBER
	3/73		307	752

AUTHOR: R. Barnes

TITLE: Asbestos and Malignant Disease

ORIG. REFS.:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Med. J. Austral.	2	1107-1112	Nov. 11, 1972				

ABSTRACT: The Workers' Compensation (Dust Diseases) Act was introduced by the Government of New South Wales in 1942. One of the objects of the Act was to eliminate litigation and the costs, delay and frustration that accompany it, while still protecting the rights of workers. The Act was widened in 1967 to include a total of 25 scheduled diseases, including silicosis covered by the original Act in 1942. One of the diseases then becoming compensable was asbestosis. From the implementation of the new Act in February, 1968, up to the end of December, 1971, 51 claims for asbestosis have been recognized by the Dust Diseases Medical Authority, and of these patients 13 have since died, 11 of them from malignant disease of the lung or pleura. Given in this report are the brief clinical histories of these 13 patients. --Cond. from text

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CLASSIFIED SUBJECT		FELLOWSHIP NUMBER	FILE NUMBER
	4/73		752

AUTHOR G.K. Sluis-Cremer and I. Webster

TITLE Acute Pleurisy in Asbestos Exposed Persons

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Environ. Research	5	380-392	Dec. 1972				

ABSTRACT It has been clinically observed that pleural effusion occurs, not infrequently, in asbestos exposed persons with or without evidence of asbestosis. Nine such cases are presented, in seven of these, pleural biopsy has been carried out by needle or by open thoracotomy. The histological features are described. The suspicion of mesof mesothelioma of the pleura necessarily arises in such cases. This problem is discussed. It is well known that a chronic pleural reaction of both the visceral and parietal pleura is common in asbestosis and frequently the dominating clinical feature. Webster (1970) for instance has found a very high incidence of chronic pleurisy (that is, fibrous thickening of the visceral pleura--usually diffuse--sometimes localised) in asbestos exposed persons.
--Authors' abst.

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MELLON INSTITUTE, PITTSBURGH, PA.

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AUTHOR: F. D. Pooley

TITLE: Asbestos Bodies, Their Formation, Composition and Character

ORIG. REFS:	VOL.	PP.	DATE	ABSTR. REFS.:	VOL.	PP.	DATE
Environ. Research	5	363-379	Dec. 1972				

ABSTRACT: Asbestos bodies extracted from human lungs have been examined under the electron microscope to determine their morphology and diffraction characteristics. The asbestos bodies were extracted from the lungs of persons exposed to the four types of commercial asbestos fiber, namely crocidolite, amosite, anthophyllite and chrysotile. Asbestos bodies were rarely formed on fibers less than 10 μm in length and practically always on straight fibers. They were found to occur on all the four commercial varieties of asbestos but less frequently on chrysotile fibers. The characteristics of the individual fibers were found to play a large part in determining the range and frequency of body shapes observed. There appears to be no evidence to suggest stepwise formation of asbestos bodies. Asbestos bodies were found to have a major crystalline component which is structurally similar to extracts of ferritin produced from animal and human organs. The material forming the asbestos body is definitely biological in origin and corresponded closely to the material defined in the medical literature as hemosiderin. -- Author's abst.

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Industrial Health Foundation, Pittsburgh, Pa.

		Digest Date	Digest Number	FILE NUMBER
		11/73	12-11-12	752

AUTHOR: K. Koshi and H. Sakabe

TITLE: Effects of Asbestos or Quartz Particles on the Mixed Cultures of Macrophage and 3T6 Cell

ORIG. REF'S.	VOL.	PP.	DATE	ABSTR. REF'S.	VOL.	PP.	DATE
Ind. Health	10	125-127	Dec. 1972				

ABSTRACT

Study of pathogenesis of pneumoconiosis at cellular level has been hindered by the lack of a suitable model system. It may be assumed that the first reaction of cells to inhaled dust particles in alveolar cavity is phagocytosis by alveolar macrophages. The way in which this is followed by fibrosis is obscure. The cytotoxic effect of silica on macrophages is documented, and may well lead to the release of factors responsible for stimulation in fibrosis. There is a correlation between the toxicity of various silica particles to macrophages in culture and the capacity of these particles to stimulate fibrosis in vivo, but this relation is not clear in other particulate matter. In this report the authors have tried to observe the effects of various dusts on the model system at cellular level.

--Cond. from text

CLASSIFIED SUBJECT

FELLOWSHIP NUMBER

FILE NUMBER

AUTHOR Pooley, F.D.

TITLE

ORIG. PI

ABSTRACT

Pooley, F. D. (1972). *Brit. J. industr. Med.*, 29, 146-153. Electron microscope characteristics of inhaled chrysotile asbestos fibre. Specimens from 300 lungs have been examined under the electron microscope to determine the morphology and diffraction characteristics of any chrysotile asbestos they contained. In 120 cases, material was prepared by alkali digestion and the residual dust was examined. In all cases standard 6-micron histological slides were partially ashed before the residue was transferred to the electron microscope grids. Of the 300 specimens examined, 20 came from men with prolonged industrial exposure to chrysotile, 87 from cases of mesothelioma, and the remainder from control groups drawn from rural and industrial populations.

Chrysotile fibres were readily identified by the characteristic polycrystalline diffraction pattern. The hollow appearance of the single fibres and their shape and arrangement also help in the identification. Specimens from men without industrial exposure contained either single short fibres or aggregates scattered throughout the lungs. In specimens from industrially exposed men, fibres were very numerous and found as strands of single fibres mainly grouped together in discrete locations. Ferruginous bodies were found rarely and only on straight fibre bundles of over several micrometers in length.

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MEDICAL INSTITUTE, PITTSBURGH, PA.

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MEDICAL INSTITUTE PITTSBURGH PA.

CLASSIFIED SUBJECT: 5/73

FELLOWSHIP NUMBER: 493

FILE NUMBER: 752

AUTHOR: M. Nurminen

TITLE: A Study of the Mortality of Workers in an Anthophyllite Asbestos Factory in Finland

ORIG. REFS.	VOL.	PP.	DATE	ABSTR. REFS.	VOL.	PP.	DATE
Work-Env.-Health	9(3)	112-118	1972				

ABSTRACT.

A cohort study of 1030 workers employed at an anthophyllite asbestos mining factory is described. It extends the information about asbestos related disease at this factory which was previously available only for workers with severe exposure. The cohort was defined as the workers with a minimum exposure of three months who had started employment at any time between 1936 and 1966 and the main analysis was of mortality up to the end of 1968. The hazards of exposure to anthophyllite asbestos dust are indicated by the main results of this mortality study: 1. The cohort of workers was found to have excess overall mortality accounted for by cancer of the lung, bronchus and trachea, respiratory tuberculosis, and other respiratory diseases. 2. Asbestosis (as an underlying or contributing cause) was mentioned on the death certificate of every fifth deceased member of the cohort. 3. The mortality from lung cancer among anthrophyllite asbestos workers with a minimum exposure of three months was in certain age groups over three times that expected. --Author's abst.

DATE EXAMINED: BY: PURPOSE OF SEARCH: CONT DI

Digest Date			File Number
8/72		81-1	753

Author: P. Brodeur

Title: Asbestos and Enzymes

Available from: Ballantine Books, 101 Fifth Avenue., New York, N.Y. 10003

153 pp.

Date of Pub. 1972 Price: $1.25

Review

Asbestos and Enzymes. P. Brodeur. Available from: Ballantine Books, 101 Fifth Ave., New York, N.Y. 10003. 153 pp. (1972) Price: $1.25.

The threat of health hazards from asbestos and enzymes used in laundry products is discussed. Details are given of scientific procedures that were required before the toxic effects of these products could be determined. Public health studies and social policies are suggested prior to release for wholesale use of technological innovations. --Pollution Abstracts

Industrial Health Foundation, Inc.

CLASSIFIED SUBJECT: 2/73

FELLOWSHIP NUMBER:

AUTHOR: P. Enterline, P DeCoufle, and Vivian Henderson

TITLE: Mortality in Relation to Occupational Exposure in the Asbest... Industry

ORIG. REF'S	VOL.	PP.	DATE	ABSTR. REF'S.	VOL.	PP
J. Occ. Med.	14	897-903	Dec. 1972			

ABSTRACT

This is a report on a follow-up study of 1,464 men who completed their ... lifetime as production or maintenance-service workers in the asbestos indus... and retired with an industry pension during the period 1941 to 1967. These men were observed for deaths through 1969. The average length of employm... in the asbestos industry for these men was 25 years and nearly all had expos... to asbestos dust. In some instances these exposures were very high and co... for many years. Mortality for this cohort of men was 14.5% higher than for t... entire population of US white males living at the same ages and time periods. This excess was due to cancer and respiratory disease. The cancer excess was chiefly due to respiratory cancer where mortality was 2.5 times the exp... The respiratory disease excess was entirely due to pneumonconiosis and pu... fibrosis, including asbestosis. --Cond. from authors' ...

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