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Mr. J. J. J.

16th August, 1977

Dr. S.F. McCullagh,
Chief Medical Officer,
James Hardie and Company
Pty. Limited,
Grand Avenue,
CAMELLIA, N.S.W. 2142

Dear Dr. McCullagh,

Thank you most sincerely for your letter of 12th July, 1977, concerning asbestos related diseases. The information that you provided will be very helpful. If you think it appropriate we would be pleased if you would put your professional account to us.

On a related matter, in case you have not yet seen it, I am enclosing a copy of the brief "comments" section from the latest IARC Monograph on the Evaluation of the Carcinogenic Risk of Chemicals to Man : Asbestos (Vol. 14). This is, of course, the output from the December 1976 meeting at the IARC.

Kind regards,

Yours sincerely,



(Dr.) S.M. Munday
Manager, Environment
and Occupational Health

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4. Experiments on Data Reported on Inhalation

All commercial forms of asbestos have been shown to cause lung cancer, mesothelioma and sarcoma. In mice, mesothelioma was shown to result following intraperitoneal injection of asbestos. In rats, various types of asbestos produced lung cancer. The results of these studies indicate that the size and shape of the fibres and the degree of their irritation and desquamation are important factors in the development of pleural or intraperitoneal infection. The oral administration of asbestos filter material to rats also resulted in an increased incidence of tumours. Mesotheliomas were produced in humans and guinea pigs following intrapleural injection of a number of types of asbestos fibres.

The size and shape of the fibres influence the incidence of tumours: fibres less than 0.5 μ m in diameter are more active in producing tumours. Glass fibres and carbolite of a similar size and shape produced tumours following their intrapleural or intraperitoneal injection in mice.

In humans, occupational exposure to amphibole, anthophyllite, actinolite and mixed fibres containing crocidolite has resulted in a high incidence of lung cancer. A preliminary study of workers exposed to anthophyllite and small amounts of chrysotile has also shown an increased incidence of lung cancer. Many pleural and peritoneal mesotheliomas have been observed after occupational exposure to amphibole, anthophyllite and chrysotile. An excess risk of gastrointestinal tract cancers has been demonstrated in groups exposed occupationally to anthophyllite, chrysotile or mixed fibres containing crocidolite. An excess of cancers of the larynx was also observed in exposed workers. Mesotheliomas have also been observed in individuals living in the neighbourhood of asbestos factories and crocidolite mines and in household contacts of asbestos workers.

Occupational exposure to asbestos may occur during the mining of fibrous minerals, as well as of minerals which are used in forms which may contain asbestiform fibres as a contaminant.

Both cigarette smoking and occupational exposure to asbestos fibres independently increase lung cancer incidence, but when they are present together they act in a multiplicative fashion.

The general population may also be exposed to asbestos fibers in air, drinking water, food and pharmaceutical and dental preparations and by consumer use of asbestos-containing products. The presence of asbestos and asbestos fibers from natural sources in the environment, other than mines or activities, has only recently shown itself to be a further potential problem.

At present, it is not possible to assess whether there is a level of exposure in humans below which an increased risk of cancer would not occur.