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Re: Asbestos + Carcinogenicity
I have the entire article if needed.
Larry Lee

Mechanisms of Mesothelioma Induction With Asbestos and Fibrous Glass [1]

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SUMMARY—Three types of asbestos in 7 forms, 6 types of fibrous glass, 2 types of silica, and 2 types of metal particles were applied on a fibrous glass vehicle to the pleura of rats. In 2 years, amosite, chrysotile, and 4 different specimens of crocidolite yielded equally high incidences of pleural mesotheliomas in the range of 58–75%. Hand-milled crocidolite fibers not exposed to extraneous oils or metallic milling yielded dose-related tumor responses comparable to those of a standard reference milled crocidolite. Standard crocidolite, inducing a high incidence of mesotheliomas, caused fewer mesotheliomas (20–32%) when reduced to submicroscopic fibrils by excessive milling. Pulverized fragments of the steel mill and nickel metal at doses exceeding potential contaminating levels did not induce tumors. Microspheres of noncrystalline silica resulted in a single mesothelioma among 48 rats. The intact fibrous glass vehicle did not yield tumors, nor did its absence alter the incidence of crocidolite-induced tumors. However, when the fibrous glass vehicle and 2 other types of fibrous glass, ranging in mean diameters from 5–10 μ, were reduced to short fibrous fragments and applied to the pleura, 4 mesotheliomas were induced among 91 rats. Two forms of an especially fine fibrous glass, ranging from 0.06–3 μ in diameter, further milled to approach the length of asbestos fibers, resulted in moderately high incidences of mesotheliomas in the range of 12–18%. Thus carcinogenicity of asbestos and fibrous glass seems primarily related to the structural shape of these materials rather than to physicochemical properties.—J Nat Cancer Inst 48: 797–821, 1972.

MESOTHELIOMAS of the pleura and antecedent fibrous plaques, comparable to those resulting from asbestos exposure in man, can be induced readily in the rat and hamster by direct intrapleural application of asbestos (*1–8*). Such experiments attest to the carcinogenicity of asbestos and offer an excellent means of investigating those carcinogenic mechanisms involved.

Three years ago we began experiments based on initial investigations suggesting that quantitative data could be obtained if treated rats were observed for 2 years (*7*). Asbestos on gelatin-satu-

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[2] National Institutes of Health, Public Health Service, U.S. Department of Health, Education, and Welfare.

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