

practice makes it more difficult. Furthermore, physicians are individually fiercely independent. This makes it doubly difficult for anyone to lead a group of physicians. Consequently, less benevolent "interest groups" have more punch.

To change this it is first necessary to point out these facts and to realize the potential of Medicine as a leading force. Then it will be necessary to see the importance of exercising this potential in using medical expertise in directing our society. Finally, the process must start in medical school, where this potential and responsibility to society should be emphasized. The medical profession does have a responsibility to lead: to lead towards a cleaner, healthier environment; to lead towards personal responsibility in preventing self-inflicted disease (alcoholism, cigarette smoking, occupational disease). Part of health is mental health and part of mental health is happiness. Medicine should focus more on the social determinants of health and happiness.

Now is the time and the medical profession has the power and the responsibility to lead.

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Carcinogenicity of Fibrous Glass

TO THE EDITOR: There recently appeared in THE WESTERN JOURNAL OF MEDICINE [125:485, Dec 1976] a short scientific communication (epitome) by Jean Felton, MD, titled "Fiberglass—Not Carcinogenic." This note may do a disservice to the uninitiated in reporting this material as "biologically innocuous." This subject area should have been more critically reviewed.

The literature has numerous references attesting to the carcinogenicity of fibrous glass in experimental investigation. This has been established in a number of recent animal studies utilizing different routes of administration and fiber types. The work of Pott and Friedrichs (1974),¹ Stanton and Wrench (1972),² and Wagner, Berry and Skidmore (1974)³ have demonstrated the ability of various forms of fibrous glass to induce malignant tumors in laboratory animals. Utilizing

methods of surgical implantation, intraperitoneal and intrapleural inoculation of fibrous glass, tumors were developed in rats similar to those observed in asbestos-exposed animals and man.

These investigations are of importance because these materials are being increasingly used, particularly as a substitute for asbestos. There is also increasing use of narrow diameter (.05-3 μ m) fibers for thermal insulation and other products. These fibers are eminently respirable, durable and may represent the physical structure found most carcinogenic in animal experiments (Stanton 1974).^{5,6} The assertion that contemporary work substantiates the classification of this material as inert is unsupported.⁷⁻¹¹ Questions of carcinogenicity of fibrous glass are unresolved and are, indeed, under very active study at this time (International Agency for Research Against Cancer, for example). This is largely due to the recent introduction of long, narrow fibers into the workplace and environment. Both fiber-induced fibrosis and carcinogenicity require long latent periods; for example, for mesothelioma usually more than 30 years. Epidemiological studies to date have had methodologic shortcomings and have dealt with workers exposed to thicker and therefore less respirable fibers.

We are concerned that fine fibrous glass fibers may be inhaled, migrate to the pleura and exert a carcinogenic effect in man exactly like asbestos and that fibrous glass may act as a lung co-carcinogen with cigarette smoke and other carcinogens. We are not convinced that fibrous glass does not have a cellular toxic effect on alveolar macrophages and pulmonary living cells that may lead to fibrosis.

That fibrous glass may be biologically hazardous if inhaled into the lung is a potentially important problem which deserves extensive and urgent study.

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The Panel Responds

TO THE EDITOR: The comments of Drs. Rom and Langer are appreciated and valued; they come from an investigative group long identified with significant contributions in the field of fibrogenic pulmonary disease.

The epitome encapsulated the opinions of Milne and Gross whose writings have appeared in scholarly, peer-review journals. In essence, the implantation studies cited embodied artificial introductions of fibers into the pleural cavity, and in quantities in excess of those possible in occupational exposure. Further, extrapolation of findings from one species to another may produce fallacious conclusions.

To be sure, direct deposition of fibers provoked tumors, but replication *in vivo* in the intact thorax bears no immediate relationship to the reality of the work setting.

It is agreed that long latent periods are needed for carcinogenicity in asbestos exposure, and glass fiber should be pursued as a comparable toxic agent under the circumstances of worker contact and inhalation.

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Tracking Down Migraine

Patients have a built-in aversion to the word "migraine." They will not use that term; they don't like it I ask them this: "Are you headachy?" Don't ask a patient "Do you have headaches?" He'll tell you about the time he got hit on the head at a football game in 1937 How do you get that family history? That is very important. If you say "Did your mother or dad ever have migraine?" "No!" That's what they'll say right off the bat. Don't ask them that. Ask them this: "Did your mother or dad have sick headaches?" "No." They may even hold on that. "Well, was your mother or dad headachy?" "Oh, yes! My dad had bad headaches. But he had sinus headaches." They'll call it sinus headache, they'll call it hypertensive headache, they'll call it allergic headache and they'll call it tension headache. If you go into the history, it's migraine time after time after time. The family history is critical. So you can't say "Did they have headaches?" You've got to say "Were they headachy?"

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Extracted from *Audio-Digest Ophthalmology*, Vol. 14, No. 11,
in the Audio-Digest Foundation's subscription series of tape-
recorded programs. For subscription information: 1577 East
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