

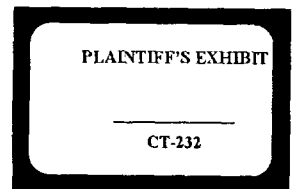
CertainTeed Subject KANAREK STUDY ON ASBESTOS IN DRINKING WATER	Date March 31, 1981	To PLEASE SEE BELOW	Location and mail code PLEASE SEE BELOW
		From T. A. Dougherty/c	Location and mail code VF P&PG #2

*forward copies to
A/C Ret Mgrs
information only.*

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In all of the controversy about health risks associated with ingestion of asbestos, frequent mention is made of the Kanarek Study which is the one piece of scientific evidence which would seem to indicate there is such a risk.

Attached is a criticism of the Kanarek Study which was done by Ian T. Higgins, M.D. of the University of Michigan School of Public Health. I think you will find it interesting and helpful in responding to people who believe that there is a health hazard connected with the use of A/C Pipe.

I think it would be well worthwhile to give copies of the attached to all of your field people so they will be as fully informed as possible.

Let me know if you have any questions.

RECEIVED MAR 31 1981



A/C Pipe
Producers Association

Internal Correspondence

TO Public Affairs Committee
International Affairs Committee

FROM *J. F. Welch*
J. F. Welch, Director, Public Affairs

DATE:
March 26, 1981

SUBJECT:

Environmental Protection Agency - Kanarek Study on Asbestos in Drinking Water

ACTION REQUIRED: Review for information and dissemination

During the hearings on industry's petition for a declaratory ruling on the safety of A/C pipe in Connecticut, J. Wister Meigs, M.D. (Yale University of Medicine) and Ian T. Higgins, M.D. (University of Michigan School of Public Health) stated that the conclusions of the Kanarek study were seriously flawed because the researchers did not control for population density factor. Dr. Higgins explains the impact of this shortcoming in the enclosed letter to the editor of the American Journal of Epidemiology, which published the Kanarek study last year.

AACPP plans to distribute this information to state health departments and water utilities via a "health facts"-type bulletin. If you have any questions, please do not hesitate to call.

JFW/ajb

cc: A. Kahn, Esq.
N. Rahn, Esq.
N. Battle

Copies to: Public Affairs Committee

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CTD033607



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The University of Michigan MAR 13 1981
D.J.M.

SCHOOL OF PUBLIC HEALTH
DEPARTMENT OF EPIDEMIOLOGY

109 OBSERVATORY STREET
ANN ARBOR, MICHIGAN 48109

March 11, 1981

The Editor
American Journal of Epidemiology
550 N. Broadway, Suite 201
Baltimore, Maryland 21205

I should like to draw your readers attention to a serious flaw in the paper by Kanarek and his colleagues (1), which invalidates their conclusion that there may be a causal connection between asbestos fibers in drinking water and cancer. In reaching this conclusion, they apparently ignored the well known association between cancer and population density. Review of Kanarek's doctoral thesis (though not of the paper in the Am. J. Epid.), shows that high fiber concentrations were concentrated in two main areas: San Francisco County (or City) and San Mateo County. The highest concentrations were in San Mateo County. If digestive tract cancer death rates in San Francisco are compared with the State of California, it is apparent that the rates are, as expected, higher in San Francisco (Table 1). This cannot, however, be attributed to the asbestos fibers in the drinking water. If New York City is compared with New York State, similar differences are observed. Unlike San Francisco, New York City does not have high fiber counts in the drinking water (2). It is clear that the fiber/cancer association is confounded by the density of population factor. The importance of population density in assessing the relationship between asbestos fibers in drinking water and cancer has been well shown by Meigs and his colleagues (3, 4).

CTD033608

The Editor
American Journal of Epidemiology
March 11, 1981

Unfortunately, conclusions are being drawn from this study that asbestos fibers in drinking water may be a cancer hazard. All the evidence is against this conclusion and theoretical considerations make the hypothesis unlikely. A similar study conducted by Severson in the Puget Sound area (5), has reached negative conclusions. though it might be noted that here, ignoring population density made it appear that fibers in drinking water were actually good for you.

CTD033609

REFERENCES

1. Kanarek MS, Conforti PM, Jackson LA, et al. Asbestos in drinking water and cancer incidence in the San Francisco Bay area. Am J Epidemiol 1980;112:54-72.
2. United States Environmental Protection Agency. Millette JR, Clark PJ, Pansing MF. Exposure to asbestos from drinking water in the United States. EPA 1979;600/1-79-028.
3. Harrington JM, Craun GF, Meigs JW, et al. An investigation of the use of asbestos cement pipe for public water supply and the incidence of gastrointestinal cancer in Connecticut, 1935-1973. Am J Epidemiol 1978; 107:96-103.
4. Meigs JW, Walter SD, Heston JF, et al. Asbestos cement pipe and cancer in Connecticut, 1955-1974. J Env Hlth 1980;42:187-191.
5. Severson RK. A study of the effects of asbestos in drinking water on cancer incidence in the Puget Sound Region, thesis for M.S. degree, Biomathematics Group, University of Washington, Seattle, Washington, 1979.

Ian T. T. Higgins
The University of Michigan
School of Public Health
Department of Epidemiology
Ann Arbor, Michigan

Table 1

Comparison of Age Adjusted Rates for White Men and Women 1950 to 1969
for Various Digestive Tract Cancers in
San Francisco County (= City) and New York City With the
States of California and New York and the United States

	Esophagus		Stomach		Colon		Rectum		Biliary Passages and Liver		Pancreas	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
San Francisco County (= City)	7.5	1.8	20.3	9.8	18.9	16.7	10.6	6.6	5.5	4.9	11.0	7.1
California State	4.0	1.2	14.4	7.2	14.6	14.2	7.2	4.7	4.4	4.4	9.8	6.0
New York City	6.2	1.7	21.8	11.9	24.3	21.1	13.0	7.6	6.5	6.4	11.5	7.5
New York State	5.4	1.4	18.5	9.8	21.7	19.6	11.5	6.8	5.5	5.6	10.6	6.7
U.S.	4.1	1.0	15.2	7.7	16.5	16.3	7.7	4.8	5.2	5.3	9.6	5.8

Jason TJ, McKay FW. U.S. Cancer Mortality by County: 1950-1969.
HEW Publication (NIH) 74-615. U.S. Government Printing Office,
Washington, D.C. 1973.

CTD033611



volume 1

number 4

date JANUARY 11, 1980

CertainTeed 

FROM: Roman P. Korobij 

SUBJECT: UNIVERSITY OF CALIFORNIA - KANAREK STUDY

"Asbestos in Drinking Water and Cancer Incidence" - University of California - EPA Study

This flare-up of the asbestos and health issue began when the EPA made a grant to Dr. Robert Cooper of the School of Public Health at the University of California. The purpose of this grant was to finance a study of the San Francisco Bay Area water supply to test the hypothesis that there is a positive association between the presence of chrysotile asbestos in drinking water supplies and cancer incidence in the human populations served by those water supplies. The San Francisco Bay Area was selected because it is known that there are varying degrees of asbestos content in the water supplies.

The study was conducted by Marty Stevens Kanarek and was the subject for his thesis for a doctorate degree from the University of California. In his thesis, Kanarek reported that statistically significant results were found for cancer of the peritoneum for both sexes, lung cancer for males and gall bladder and pancreatic cancers for females.

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Although Dr. Cooper had not issued his report, the thesis nonetheless was forwarded to EPA and at the direction of the EPA an abstract of the thesis was sent to utilities involved in the study. Shortly thereafter front page headlines in the San Francisco and Oakland newspapers proclaimed that the drinking of Bay Area potable water supply had been linked to cancer. Naturally, this tended to create a mini panic with lots of press and T.V. coverage paid to the news. However, public interest soon died down. The reason was in part due to the rational approach by the California State Public Health officials. The California Public Health Department issued a position that the University of California doctoral thesis contained no new or original evidence of a medical nature about cancer and asbestos. Nor did it establish any causal link between asbestos in the Bay Area drinking water and the incidence of cancer. It simply requested that water utilities should develop plans to reduce the asbestos content in their water supplies and to adjust water quality if necessary so that there would be no pickup of asbestos from A/C pipe.

The EPA has issued several position papers on this study. The most significant part of their position papers is the statement that the results of this new study in California are not definite enough to justify extensive modifications in water supply treatment and distribution, but it would be prudent to operate water systems to minimize fiber counts. This would include optimal operation of filtration to remove fibers from raw water when present and actions to stabilize distributed water so that it does not erode the A/C pipe and then add fiber to drinking waters.

The industry's position on the Kanarek study is that although the data do support a statistical association, they are clearly inadequate even for speculation in establishing a cause and effect relationship. Determining causality involves a number of indispensable factors, none of which is considered in this study. For example, the multifactorial etiology of cancer is well known, particularly in relation to cancer of the lung, yet this factor is not adequately discussed in the Kanarek thesis. With respect to cancer of the gall bladder and pancreas, there is a complete absence of data indicating an increased risk to those cancers among those highly exposed occupationally in the past to asbestos, so any potential association in the general population would have to be examined more critically than is done in this study. In the case of cancer of the peritoneum, peritoneal involvement is a most common occurrence even though the primary site of the cancer may be

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another organ of the abdomen; therefore, it is critical that cancers of the peritoneum be studied to determine whether they are primary or secondary tumors. Again, the Kanarek thesis does not take this factor into account.

In summary, cancer causation is a highly complex process and the superficial biological observations of the Kanarek study do not support asbestos in drinking water as being causally related to the cancer incidence noted in the report.

CTD033614

NEWS RELEASE

Department of Health Services
714 P Street, Sacramento, CA. 95814

NUMBER: 52-78
FOR RELEASE: IMMEDIATE

DATE: 22 September 1978
CONTACT: Pete Weisser
(916) 445-1967

The UC doctoral thesis abstract (entitled: Asbestos in Drinking Water and Cancer Incidence) contains no new or original evidence of a medical nature about cancer or asbestos, nor does it establish any causal link between asbestos in Bay Area drinking water and the incidence of cancer.

It does suggest an apparent statistical correlation between water supplies high in naturally occurring asbestos and higher-than-expected cancer of some body sites, including the stomach.

The department agrees with the student's conclusion (recited on pages 155 and 156 of the complete thesis) that:

"The results of this study can only be judged as suggestive of needed further research into the question of the carcinogenic effects of asbestos fibers in drinking water.

"The study design was the indirect approach; census tracts were compared. Indirect epidemiological studies such as this one can only specify associations, and cannot pinpoint causation."

As the student also noted in his conclusion the sample was limited and potentially important variables such as cigarette smoking, alcohol consumption and other dietary factors were not included in his research.

Accordingly, it would be unscientific to conclude from the relatively narrow scope of research of this study that Bay Area water users need to change in any way their habitual and customary use and consumption of water.

However, the research path explored here merits further study.

(more)

CTD033615

22 September 1978

The department plans to consult with the water utilities involved in the study and stands ready to perform further research and consultation with local health officers, the university, the Federal Environmental Protection Agency, and other agencies and individuals with an interest in safeguarding California water supplies.

We suggest that persons interested in the water aspects of this study contact the Sanitary Engineering Section of the State Department of Health Services at (415) 843-7900. Persons interested in the cancer epidemiological aspects of the study, which is now being reviewed by the Environmental Protection Agency, may contact Dr. Donald Austin, Chief of the Department's Resource for Cancer Epidemiology through the same telephone number in Berkeley.

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ASSIGNMENT EDITOR'S NOTE: The Department Health Services meeting with water utility representatives is scheduled for Tuesday at 10 am at the Department of Health Services offices at 2151 Berkeley Way in Berkeley. The meeting is scheduled for Room 123.

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