

Table 4.—Smoking Habits of 320 Abestos Workers Exposed to Asbestos Dust 20 Years or Longer Compared With Sample of Men From the General Population*

Age	Never Smoked Regularly		Smoked Pipe, Cigar, Never Cigarettes		History of Cigarette Smoking	
	Asbestos Workers, %	General Population, %	Asbestos Workers, %	General Population, %	Asbestos Workers, %	General Population, %
40-49	9.3	18.8	4.6	7.5	86.1	73.7
50-59	14.3	19.9	6.1	9.9	79.6	70.2
60-69	20.3	23.6	10.1	16.2	69.7	60.2
70+	25.5	37.1	11.8	23.9	62.7	39.0

*Sample of men from general population as reported by Hammond and Garfinkel.⁷

death rate from lung cancer increases greatly with the amount of cigarette smoking.⁸ However, a large proportion of all men in the United States have a history of regular cigarette smoking. From data in a prospective study on smoking,⁸ it may be estimated that if all men smoked a pack or more of cigarettes a day (ie, if all the nonsmokers, cigar smokers, pipe smokers, and light cigarette smokers had, instead, been heavy cigarette smokers) the lung-cancer death rate would be approximately 3.4 times as high as it is at this time.

From this we may conclude that even if all our asbestos workers had smoked a pack or more of cigarettes a day (and, indeed, from our sample we know they did not), and if exposure to asbestos were of no significance, then their lung cancer death rate would have been about 3.4 times as high as the rate in the general US male population. Clearly, the smoking habits of the asbestos workers cannot account for the fact that their lung-cancer death rate was 6.8 times as high as that of white males in the general population.

Gastrointestinal Cancer.—Rather to our surprise, the death rate from cancer of the stomach and the death rate from cancer of the colon and rectum were higher among the asbestos workers than would be expected from the rates reported for the US white male population, calculated in the same way as for lung cancer. Twelve deaths from gastric cancer occurred among the asbestos workers, as compared with only 4.3 expected. Seventeen deaths from cancer of the colon and rectum occurred among the asbestos workers, as compared with 5.2 expected.

Cancer of All Other Sites.—The combined death rate from cancer of all sites other than lung and pleura, and stomach, colon, and rectum was not increased. Twenty-one such deaths occurred among asbestos workers, as compared with 20.5 expected.

Asbestosis.—Of the 255 deaths, 12 were due to asbestosis (pulmonary insufficiency, cor pulmonale). The lapsed time from first asbestos exposure to death from asbestosis averaged 45.8 years, with a range of 32 to 59 years.

Comment

Carcinoma of the Lung.—The results with regard to carcinoma of the lung are clear. Industrial ex-

posure to asbestos by insulation workers, as studied here, results in a marked increase in the incidence of cancer of the lung, approximately six to seven times the expected incidence. Altogether, 45 (17.6%) of 255 men with more than 20 years elapsed since the onset of exposure died of cancer of the lung or pleura.

These data do not give the "incidence of cancer of the lung in asbestosis." They relate to the specific conditions of our investigation: to a group of men with only intermittent exposure to materials containing limited amounts (often 2% to 20%) of asbestos under working conditions varying from very dusty, as in extracting old insulation in closed quarters, to those with little dust exposure, as in building construction in open air. Moreover, they relate to the relatively recent past, in a trade with the shorter work week of the strong building trades unions, in an era when industry has been aware of potential asbestos hazard and the working population has had some consciousness of potential risk associated with dust exposure. These data would not necessarily apply to asbestos exposure in other industries, such as the factory production of asbestos products, the asbestos textile industry, etc, where conditions of employment might be quite different. Our results do not contradict the even higher incidence of lung cancer suggested in other studies³; they are merely a shade less striking.

Diffuse Pleural and Peritoneal Malignancy—Mesothelioma.—Determining the incidence of diffuse pleural mesothelioma is complicated by the insecurity of its histological verification. While some pathologists will so categorize a high proportion of diffuse pleural tumors, in the experience of others it is a very rare tumor and may be mimicked by anaplastic peripheral carcinoma of the lung and diffuse fibrosarcoma of the pleura. It is difficult to evaluate completely the published reports of diffuse pleural mesothelioma in asbestosis in the absence of complete details of each case.

To the present time, there has been no information concerning the incidence of diffuse pleural mesothelioma in asbestosis, since the published cases are reported without reference to a total population in which they occur. Nevertheless, the