

Man-made fibers and mortality

Table 1. Main findings from two cohort mortality studies concerning man-made-fiber production workers. (SMR = standardized mortality ratio)

Study	Time from first employment (years)	Fibrous glass			Mineral wool		
		Observed deaths	Expected deaths	SMR	Observed deaths	Expected deaths	SMR
Enterline & Marsh (1)	20—29	83	84.4	0.98	16	11.0	1.45
	≥ 30	47	36.0	1.31	14	8.1	1.73
	≥ 20	130	120.4	1.08	30	19.1	1.57
Saracci et al (5)	20—29	12	15.1	0.79	11	8.2	1.34
	≥ 30	6	3.2	1.88	8	3.7	2.16
	≥ 20	18	18.3	0.98	19	11.9	1.60

The controversy between Dr Peterson and Drs Saracci and Simonato in the December, 1983, issue of the *Scandinavian Journal of Work, Environment & Health* is one I would like to enter. As publication of the proceedings of the Copenhagen conference on the "Biological Effects of Man-Made Mineral Fibres" was so extraordinarily delayed, the arguments which were presented in my peer review (2) of the mortality studies would not have been seen by Dr Peterson. I shall confine myself here to the evidence on lung cancer and present again a table from my paper which summarized the more relevant findings from the large American and European cohort studies.

For me the strength of the evidence lay in (i) the independent similarity of the results from the two studies, (ii) the higher standardized mortality ratios (SMR) observed for those exposed in mineral wool than for those exposed in fibrous glass production — compensating to some extent for the lack of other quantitative evidence of exposure-response, and (iii) the fact that asbestos at similar concentrations would not have produced a greater effect (3).

I agree with Drs Saracci and Simonato, all the same, that more evidence than this is needed to prove a causal relationship between man-made mineral fiber exposure and lung cancer. The hypothesis is biologically plausible, has considerable support from animal studies, and findings from the two large cohort studies shown in the table are certainly compatible. On the other hand (i) the multicenter studies were not wholly consistent, (ii) the number of excess deaths in the eight main cells of the table are quite small, (iii) there was little observed correlation with exposure, and (iv) the confounding effect of exposure to other mineral fibers and/or other materials in the work environment cannot be assessed.

What is needed, of course, is further epidemiologic data; one such set from Denmark has just been published (4).

References

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