Discussion

We have examined nearly one-third of the living household asbestos contact cohort members. New data confirm and extend our previous observations. The presence of radiographic abnormalities in our study cohort was statistically significantly associated with clinical abnormalities observed, duration of index worker employment and length of time since first exposure. These x-ray abnormalities, which are usually seen only after occupational asbestos exposure, were significantly more prevalent among the study group than a control comparison group. Although the number of examined individuals has more than doubled since our previous report, the overall prevalence of abnormalities has remained constant. It is most probable that our results represent a good approximation of the prevalance of radiographic abnormalities in the total cohort.

Table 13

Prevalence of Current Symptoms and Clinical Findings* among Household Contacts by Radiographic Abnormalities†

Radiographic Finding	Number Examined		Dyspnea	Rales	Rhonchi	Cyanosis	Clubbing
Small opacities	Absent	558	22 (4%) §	23 (4%) ‡	27 (5%) ¶	2 (0.4%) ¶	2 (0.4%) §
	Present	111	11 (10%)	11 (10%)	10 (9%)	2 (2%)	3 (3%)
Pleural change	Absent	495	20 (4%) ¶	18 (4%) §	26 (5%) ¶	0 §	2 (0.4%) ¶
	Present	174	13 (8%)	16 (9%)	11 (6%)	4 (2%)	3 (2%)
Small opacities and/or pleural abnormality	Absent	435	14 (3%) §	13 (3%) §	21 (5%) ¶	0 §	1 (0.2%)
	Present	234	19 (8%)	21 (9%)	16 (7%)	4 (2%)	4 (2%)
Total		669	33 (5%)	34 (5%)	37 (6%)	4 (0.6%)	5 (0.7%)

*Ten individuals did not have physical examinations.

†Prevalence of abnormality significantly greater among those with radiographic abnormality than those with normal x-rays.

‡Significantly different at $p < .05$ using χ^2 test.

§Significantly different at $p < .01$ using χ^2 test.

¶Not statistically significant.

The early observation that pleural calcification, which is uncommon in the general population (.02–.5%)[8–10] and common in asbestos-exposed populations (30+%)[7,11] suggested that pleural calcification might serve as a marker of past asbestos exposure in non-occupationally exposed groups. This association was first remarked upon by Kiviluoto in 1960 when he described an abnormally high prevalence of pleural calcification among residents of a district in Finland in which an anthophyllite asbestos mine and mill had been operating for many years.[12] Subsequently, similar observations were made in other countries.[13–15] A survey of factory workers, factory worker household contacts, and factory neighborhood residents reported in 1971 by Navratil described an increased prevalence of pleural calcification among not only the factory workers but the relatives of factory workers and the residents in the neighborhood of the factory.[16] However, both the neighborhood and blood relative groups were small (155 and 114 respectively).