Table 10—Example of Adjustment for Smoking Applied to Welders and Sheet Metal Workers Doing Welding

	Packages of Cigarettes Smoked per Day						
	None	<½	½ —	1 —	2 or more	Not recorded	Total
All cases and controls, male *							
1. Cases	22	16	69	296	80	10	493
2. Controls	110	45	105	193	22	18	493
3. Total	132	61	174	489	102	28	986
4. Proportion of cases among total cases and controls	0.167	0.263	0.396	0.605	0.783	0.357	
Welders and sheet metal workers doing welding, male							
5. Cases	0	0	2	11	1	0	14
6. Controls	1	0	0	1	0	0	2
7. Total	1	0	2	12	1	0	16
8. Expected number of welder cases †	0.167	0.0	0.792	7.260	0.783	0.0	9.002

$$\text{Expected proportion of cases among welders} = \frac{9.002}{16} = 0.563$$

$$\text{Observed proportion of cases among welders} = \frac{14}{16} = 0.875$$

Ninety-five per cent confidence limits ‡ for the proportion $\frac{14}{16}$ = (0.617, 0.984)—statistically significant at 95 per cent level.

* Females excluded from total group, since only males are included in groups to which test was applied.

† Obtained by applying the proportion of cases among total cases and controls in each smoking category to the number of welders in that smoking category [line No. 4 × line No. 7].

‡ Hald, A. Statistical Tables and Formulas. New York: John Wiley, 1953.

Note: This test also was applied to all other occupation groups shown in Table 9. The group "steam fitters, boilermakers, asbestos workers" was on the borderline of statistical significance at the 95 per cent level. None of the other groups met the 95 per cent level of statistical significance.

as separate factors in lung cancer. For example, both cigarette smoking and welding appear to be related to the disease, but do welders get lung cancer more frequently merely because as a group they are heavy cigarette smokers? Although data from the present study involve small numbers for many of the occupations, analysis does indicate that welding as an occupation operates as a factor distinct from cigarette smoking in relation to lung cancer (Table 10). The group of steam fitters, boilermakers, and asbestos workers lies on the borderline of statistical significance when the effect of cigarette smoking is controlled. In the other occupational groups the numbers are such that the differences might arise from chance variation more than five times in a hundred.

However, all the occupations listed in Table 9 deserve intensive study to determine their precise relationship to lung cancer. One important step is to assemble populations of individuals employed in these occupations, and with varied smoking histories, in order to observe their lung cancer incidence rates. These rates may then be compared with the rate for the corresponding age-sex group in the general population. One may thus determine