

per 100,000 Males
by Smoking Habits

Age Group	Relative Prevalence †	All Quantities
None	Heavy	
7	13	6
4	27	11
12	7	4
6	17	7
0	..	..
5	29	15
5	9	4
17	25	5

Hill; Wynder and Graham; and

as cigarettes, with pipes and
of tobacco a week = 4 cigarettes
and 3. Sadowsky, Cilliam, and
at study, quantity smoked daily.

nonsmokers; all quantities—rate

of cigarettes per day:—1. Doll
and Cornfield—41 or more; and

p. Our data parallel
recent, well controlled
ate a positive correla-
rette smoking and lung
ation which increases
; amount of cigarette
can hardly escape the
Doll and Hill⁴ that
ctor and an important
duction of carcinoma
l the more recent con-
“The results amount, I
f that smoking is a
l carcinoma.”
smoker or prospective
may wish to know how
s of developing lung
used by such smoking.
at a correlation exists,
quire how many times
smoking increase the

likelihood of lung cancer? Further,
what is that likelihood in absolute
terms? To answer these questions
definitely would require that records of
cigarette smoking for large numbers of
persons in the lung cancer age be
assembled. These persons would then
be placed in categories with respect to
cigarette smoking, e.g., nonsmokers,
moderate smokers, and heavy smokers.
Finally they would be observed for a
sufficient length of time to determine the
rate of lung cancer among the various
categories of cigarette smokers and the
nonsmokers. (Such studies are now
under way.)

However, statistical devices have been
developed for data such as those in the
present investigation which, if one is
willing to make certain assumptions,
yield an answer to the question, how
many times does cigarette smoking in-

crease the likelihood of lung cancer?
Application of Cornfield's formula^{11, 12}
to the data from four studies, including
the present one (Table 6), indicates that
for men aged 50–59 the prevalence of
lung cancer is from four to 11 times as
great among smokers as among non-
smokers, and from seven to 27 times as
great among heavy smokers as among
nonsmokers. Similar ratios were found
for the 60–69 age group. This formula
involves the assumption that in so far as
smoking history is concerned, the pa-
tients are a representative sample of all
lung cancer cases and the controls are
a representative sample of all other per-
sons in the general population.

Findings on Occupations

As noted earlier, the records for lung
cancer patient and controls showed all

Table 7—Twenty Per cent Sample from Complete List of
Occupational Groups¹ in Which There Were at Least 5
Cases or 5 Controls Employed for 5 Years or More

Occupation	Persons Employed in Occupation at Least 5 Years	
	Cases	Controls
006 Authors, editors, and reporters	7	9
088 Ship captains, mates, pilots, and engineers	8	8
105 Clerks, general office	2	8
155 Canvassers and solicitors	3	11
180 Salesmen to consumers	7	4
227 Waiters and waitresses, except private family	14	10
266 Policemen and detectives, public service	6	3
307 Animal and livestock farmers	6	5
317 Farm hands, animal and livestock	10	10
433 General woodworking occupations, not elsewhere classified	8	7
516 Painters, except construction and maintenance	3	6
524 Brick and stonemasons and tile setters	5	1
532 Construction occupations, not elsewhere classified	45	25
542 Locomotive firemen	3	6
560 Attendants, filling stations and parking lots	10	9
583 Mechanics and repairmen, not elsewhere classified	15	16

Note: Sample randomly selected from the 81 occupation groups which met the stated frequency-
duration requirements (at least 5 cases or 5 controls with 5 years or more employment). Occupa-
tions classified according to 3-digit categories in the Dictionary of Occupational Titles (2nd ed.).
Washington, D. C.: U. S. Employment Service, 1949.