

Table 2. Summary of Selected Results.

FINDING	101 PIPE COVERERS		94 CONTROLS		P VALUE
	MEAN	SD	MEAN	SD	
Age (yr)	41.5	11.6	40.9	11.6	NS
Height (in)	67.9	2.3	68.4	2.7	NS
Weight (lb)	168.0	23.5	174.7	27.5	NS
RESPIRATORY SYMPTOMS					
	NO. POSITIVE	% POSITIVE	NO. POSITIVE	% POSITIVE	
Cough — day — winter	31	30.7	18	19.1	NS
Cough — day — summer	21	20.8	9	9.6	<0.005
Cough 3 yr	25	24.8	9	9.6	<0.01
Phlegm — day — winter	39	38.6	23	24.5	<0.05
Phlegm — day — summer	34	33.7	12	12.8	<0.005
Wheezing apart from colds	29	28.7	15	16.0	<0.01
Breathlessness (Fletcher III or more)	38	37.6	23	24.5	<0.05
Shortness of breath, 1 flight	26	25.7	6	6.4	<0.005
"Heart trouble" or "high blood pressure"	20	19.8	15	16.0	NS
SMOKING CATEGORY					
	NO. POSITIVE	% POSITIVE	NO. POSITIVE	% POSITIVE	
Never smoked	7	6.9	7	7.4	NS
Ex-smoker	27	26.8	23	24.5	NS
Present smoker	67	66.4	62	66.0	NS
Uncertain recording	0	0	2	2.1	NS
PHYSICAL EXAMINATION					
	NO. POSITIVE	% POSITIVE	NO. POSITIVE	% POSITIVE	
Basilar rales:					
Right lower lobe	23	22.8	5	5.3	<0.005
Left lower lobe	16	15.8	7	7.4	NS
2 or more sites	16	15.8	4	4.2	<0.01
Clubbed fingers — hyponychial angle >198°	20	19.8	5	5.3	<0.005
PULMONARY FUNCTION					
	MEAN	SD	MEAN	SD	
FVC (liters)	3.9	± 0.76	4.3	± 0.87	<0.001
FEV ₁ (liters)	3.0	± 0.77	3.6	± 0.74	<0.001
PF (liters/min)	478.8	± 97.9	526.3	± 84.6	<0.001
FVC % of predicted	92.7	± 1.3	102.7	± 1.7	<0.001
ROENTGENOLOGIC PANEL INTERPRETATION					
	NO. POSITIVE	% POSITIVE	NO. POSITIVE	% POSITIVE	
(1) Normal	28	27.8	52	55.5	<0.001
(2) Other abnormality	2	1.9	8	8.5	
(3) Questionable asbestosis	27	26.7	13	13.8	
(4) Slight asbestosis	31	30.7	19	20.1	
(5) Moderately advanced asbestosis	9	8.9	2	2.1	
(6) Advanced asbestosis	4	4.0	0	0	

Wheezes, rhonchi and moist rales were present equally often in both groups.

Ventilatory Tests

There was a marked difference in mean FVC (Table 2). Peak flow and FEV₁ were also significantly lower in the exposed workers, and were close to the predicted level in the control group (Table 2).

Roentgenologic Findings

Moderately advanced (code 5) or advanced asbestosis (code 6) was diagnosed six times more frequently in pipe coverers than in the controls, whereas slight asbestosis (code 4) occurred only 1.4 times more frequently (Table 2). For each of the three observers, the chances were good that the classification agreed with the exposure history when the readings were moderately advanced or advanced, the chances were much smaller when the classification was questionable or slight asbestosis. Of the two controls with a reading of "moderately advanced asbestosis," one had previously recognized pulmonary fibrosis after smoke inhalation 30 years ago, and the

other had bullous emphysema with diffuse linear opacifications.

Medical-Record Review

Forty-seven pipe coverers and 35 controls had notations concerning cardiopulmonary complaints, an insignificant difference (*p* greater than 0.05). However, pleurisy, pleural effusion and pleural rub were noted 13 times in pipe coverers and four times in controls. Other notations that were more common in pipe coverers included bronchitis (10 and three), influenza (15 and four) and dyspnea (five and zero).

Prevalence of Asbestosis

To assess the prevalence of this disease it became necessary to define criteria. Manifestations most commonly reported in persons with known asbestosis were used¹⁹⁻²³: dyspnea on climbing one flight of stairs or less, basilar rales in two or more sites; clubbing of the fingers — that is, a hyponychial angle of 198° or greater, a vital capacity of less than 80 per cent of the predicted value, and a roentgenogram consistent with moderately advanced or ad-