

TABLE P-4.

Exposure Index-by-Covariate Interactions for Immunologic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low		Medium		High				
Composite Skin Test Diagnosis	Exposure Index-by- Lifetime Cigarette Smoking History	0 pack-yrs.	n	29		30		31		Overall		0.142
		0-1 dr./day	Number/%									
		Abnormal	3	10.3%	1	3.3%	0	0.0%	M vs. L	0.30 (0.03,3.05)	0.586	
		Normal	26	89.7%	29	96.7%	31	100.0%	H vs. L	—	0.214	
	Exposure Index-by- Current Alcohol Use (Officer)	0 pack-yrs.	n	8		3		4		Overall		0.229
		>1-4 dr./day	Number/%									
		Abnormal	0	0.0%	0	0.0%	1	25.0%	M vs. L	—	—	
		Normal	8	100.0%	3	100.0%	3	75.0%	H vs. L	—	0.666	
		>0-10 pack-yrs.	n	22		15		17		Overall		0.266
		>0-1 dr./day	Number/%									
		Abnormal	0	0.0%	1	6.7%	0	0.0%	M vs. L	—	0.810	
		Normal	22	100.0%	14	93.3%	17	100.0%	H vs. L	—	—	
		>0-10 pack-yrs.	n	5		10		3		Overall		0.619
		>1-4 dr./day	Number/%									
		Abnormal	1	20.0%	1	10.0%	1	33.3%	M vs. L	0.44 (0.02,9.03)	0.999	
		Normal	4	80.0%	9	90.0%	2	66.7%	H vs. L	2.00 (0.08,51.59)	0.999	
	>0-10 pack-yrs.	n	0		0		1		Overall		—	
	>4 dr./day	Number/%										
	Abnormal	0	—	0	—	0	0.0%	M vs. L	—	—		
	Normal	0	—	0	—	1	100.0%	H vs. L	—	—		

TABLE P-4. (continued)

Exposure Index-by-Covariate Interactions for Immunologic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low		Medium		High				
Composite Skin Test Diagnosis (continued)		>10 pack-yrs. 0-1 dr./day	n	18		27		32		Overall		0.035
			Number/%									
			Abnormal	3	16.7%	1	3.7%	0	0.0%	M vs. L	0.19 (0.02,2.02)	0.336
			Normal	15	83.3%	26	96.3%	32	100.0%	H vs. L	—	0.083
		>10 pack-yrs. >1-4 dr./day	n	6		9		13		Overall		0.149
			Number/%									
			Abnormal	1	16.7%	0	0.0%	0	0.0%	M vs. L	—	0.800
			Normal	5	83.3%	9	100.0%	13	100.0%	H vs. L	—	0.632
		>10 pack-yrs. >4 dr./day	n	4		0		1		Overall		—
			Number/%									
			Abnormal	0	0.0%	0	—	0	0.0%	M vs. L	—	—
			Normal	4	100.0%	0	—	1	100.0%	H vs. L	—	—

TABLE P-4. (continued)

Exposure Index-by-Covariate Interactions for Immunologic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value	
				Low		Medium		High					
Composite Skin Test Diagnosis	Exposure Index-by- Lifetime Alcohol History (Enlisted Flyer)	0	n	2		5		6		Overall		—	
			Number/%										
			Abnormal	0	0.0%	0	0.0%	0	0.0%	M vs. L	—	—	
											</		

TABLE P-4. (continued)

Exposure Index-by-Covariate Interactions for Immunologic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low		Medium		High				
Composite Skin Test Diagnosis	Exposure Index-by- Lifetime Alcohol History	0 dr.-yrs. 0-1 dr./day	n	10		13		14		Overall		0.927
			Number/%	1	10.0%	2	15.4%	2	14.3%	M vs. L	1.64 (0.13,21.10)	0.999
			Abnormal Normal	9	90.0%	11	84.6%	12	85.7%	H vs. L	1.50 (0.12,19.24)	0.999
	Exposure Index-by- Current Alcohol Use (Enlisted Groundcrew)	>0-40 dr.-yrs. 0-1 dr./day	n	71		64		60		Overall		0.315
			Number/%	3	4.2%	7	10.9%	4	6.7%	M vs. L	2.78 (0.69,11.26)	0.246
			Abnormal Normal	68	95.8%	57	89.1%	56	93.3%	H vs. L	1.62 (0.35,7.54)	0.814
		>0-40 dr.-yrs. >1-4 dr./day	n	11		9		12		Overall		0.423
			Number/%	0	0.0%	0	0.0%	1	8.3%	M vs. L	—	—
			Abnormal Normal	11	100.0%	9	100.0%	11	91.7%	H vs. L	—	0.999
		>40 dr.-yrs. 0-1 dr./day	n	11		11		13		Overall		0.034
			Number/%	1	9.1%	4	36.4%	0	0.0%	M vs. L	5.71 (0.52,62.66)	0.310
			Abnormal Normal	10	90.9%	7	63.6%	13	100.0%	H vs. L	—	0.916
		>40 dr.-yrs. >1-4 dr./day	n	7		6		6		Overall		—
			Number/%	0	0.0%	0	0.0%	0	0.0%	M vs. L	—	—
			Abnormal Normal	7	100.0%	6	100.0%	6	100.0%	H vs. L	—	—
		>40 dr.-yrs. >4 dr./day	n	5		2		3		Overall		0.659
			Number/%	1	20.0%	0	0.0%	1	33.3%	M vs. L	—	0.999
			Abnormal Normal	4	80.0%	2	100.0%	2	66.7%	H vs. L	2.00 (0.08,51.59)	0.999

TABLE P-4. (continued)

Exposure Index-by-Covariate Interactions for Immunologic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
CD2 Cells	Exposure Index-by- Current Alcohol Use (Enlisted Flyer)	0-1	n	17	20	20			
			Adj. Mean ^a	1,586.5	1,539.1	1,876.5	M vs. L	—	0.769
			95% C.I. ^a	(1,282.6, 1,962.4)	(1,224.3, 1,934.8)	(1,507.2, 2,336.3)	H vs. L	—	0.110
		>1	n	3	4	4			
			Adj. Mean ^a	1,411.8	1,835.2	1,352.0	M vs. L	—	0.278
			95% C.I. ^a	(961.4, 2,073.3)	(1,335.2, 2,522.4)	(951.8, 1,920.5)	H vs. L	—	0.851
CD2 Cells	Exposure Index-by- Lifetime Cigarette Smoking History (Enlisted Groundcrew)	0	n	9	15	9			
			Adj. Mean ^a	1,562.2	1,505.5	1,511.9	M vs. L	—	0.801
			95% C.I. ^a	(1,225.6, 1,991.3)	(1,230.4, 1,842.1)	(1,185.1, 1,928.8)	H vs. L	—	0.842
		>0-10	n	18	19	17			
			Adj. Mean ^a	1,789.3	1,687.4	1,308.9	M vs. L	—	0.610
			95% C.I. ^a	(1,493.8, 2,143.2)	(1,407.1, 2,023.4)	(1,096.4, 1,562.5)	H vs. L	—	0.010
		>10	n	15	30	21			
			Adj. Mean ^a	1,522.5	1,657.3	1,908.9	M vs. L	—	0.446
			95% C.I. ^a	(1,245.7, 1,860.8)	(1,427.6, 1,924.1)	(1,615.1, 2,256.1)	H vs. L	—	0.061

TABLE P-4. (continued)

Exposure Index-by-Covariate Interactions for Immunologic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
CD4 Cells	Exposure Index-by- Current Alcohol Use (Enlisted Flyer)	0-1	n	17	20	20			
			Adj. Mean ^a	891.5	886.5	1,004.1	H vs. L	—	0.962
			95% C.I. ^a	(696.9, 1,140.4)	(680.3, 1,155.2)	(779.0, 1,294.1)	H vs. L	—	0.324
		>1	n	3	4	5			
CD4 Cells	Exposure Index-by- Lifetime Cigarette Smoking History (Enlisted Groundcrew)		Adj. Mean ^a	946.0	1,119.6	841.7	H vs. L	—	0.545
			95% C.I. ^a	(606.3, 1,476.0)	(775.3, 1,616.9)	(578.8, 1,224.2)	H vs. L	—	0.649
		0	n	9	14	9			
			Adj. Mean ^a	840.9	773.5	784.3	H vs. L	—	0.589
			95% C.I. ^a	(653.8, 1,081.6)	(618.7, 967.0)	(609.5, 1,009.4)	H vs. L	—	0.681
		>0-10	n	18	19	17			
			Adj. Mean ^a	1,058.3	991.4	734.5	H vs. L	—	0.582
			95% C.I. ^a	(876.8, 1,277.3)	(819.9, 1,198.7)	(611.3, 882.6)	H vs. L	—	0.004
		>10	n	15	30	21			
			Adj. Mean ^a	858.8	958.3	1,098.3	H vs. L	—	0.341
			95% C.I. ^a	(697.6, 1,057.3)	(820.4, 1,119.4)	(923.0, 1,306.9)	H vs. L	—	0.240

TABLE P-4. (continued)

Exposure Index-by-Covariate Interactions for Immunologic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
CD8 Cells	Exposure Index-by- Age (Officer)	Born >1942	n	16	8	6			
			Adj. Mean ^a	405.5	477.1	690.7	M vs. L	—	0.415
			95% C.I. ^a	(245.3, 670.2)	(272.6, 834.9)	(388.1, 1,229.2)	H vs. L	—	0.015
		Born 1923- 1941	n	32	37	39			
			Adj. Mean ^a	525.2	520.4	504.6	M vs. L	—	0.935
			95% C.I. ^a	(325.3, 848.0)	(332.5, 814.5)	(315.1, 808.0)	H vs. L	—	0.720
CD8 Cells	Exposure Index-by- Current Alcohol Use (Enlisted Flyer)	Born <1922	n	3	8	2			
			Adj. Mean ^a	1,121.9	399.2	466.1	M vs. L	—	<0.001
			95% C.I. ^a	(568.6, 2,213.7)	(231.2, 689.4)	(215.9, 1,006.2)	H vs. L	—	0.036
		0-1	n	17	20	20			
			Adj. Mean ^a	499.6	502.8	674.9	M vs. L	—	0.965
			95% C.I. ^a	(369.7, 675.0)	(363.8, 695.0)	(494.9, 920.4)	H vs. L	—	0.044
CD8 Cells	Exposure Index-by- Current Alcohol Use (Enlisted Flyer)	>1	n	3	4	5			
			Adj. Mean ^a	244.2	569.6	383.6	M vs. L	—	0.015
			95% C.I. ^a	(141.7, 420.6)	(363.5, 892.7)	(242.7, 606.5)	H vs. L	—	0.153

TABLE P-4. (continued)

Exposure Index-by-Covariate Interactions for Immunologic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
CD8 Cells	Exposure Index-by- Lifetime Alcohol History	0 dr.-yrs.	n	4	4	8			
		0-1 dr./day	Adj. Mean ^a 95% C.I. ^a	465.8 (286.8, 756.6)	311.7 (194.5, 499.5)	364.5 (259.0, 513.0)	M vs. L H vs. L	— —	0.234 0.403
	Exposure Index-by- Current Alcohol Use	>0-40 dr.-yrs.	n	28	37	27			
		0-1 dr./day	Adj. Mean ^a 95% C.I. ^a	482.9 (393.9, 592.0)	469.2 (384.0, 573.3)	496.0 (404.9, 607.5)	M vs. L H vs. L	— —	0.810 0.835
	(Enlisted Groundcrew)	>0-40 dr.-yrs.	n	1	9	1			
		>1-4 dr./day	Adj. Mean ^a 95% C.I. ^a	940.0 —	441.4 (316.8, 615.2)	588.4 —	M vs. L H vs. L	— —	0.132 0.484
		>40 dr.-yrs.	n	5	8	7			
		0-1 dr./day	Adj. Mean ^a 95% C.I. ^a	339.3 (217.1, 530.4)	572.0 (407.1, 803.6)	422.1 (290.2, 614.0)	M vs. L H vs. L	— —	0.060 0.437
		>40 dr.-yrs.	n	2	5	2			
		>1-4 dr./day	Adj. Mean ^a 95% C.I. ^a	539.0 (275.3, 1,055.1)	343.0 (220.4, 533.6)	844.9 (431.0, 1,656.6)	M vs. L H vs. L	— —	0.263 0.349
		>40 dr.-yrs.	n	2	1	1			
		>4 dr./day	Adj. Mean ^a 95% C.I. ^a	390.1 (201.7, 754.3)	638.5 —	975.9 —	M vs. L H vs. L	— —	0.400 0.121

TABLE P-4. (continued)

Exposure Index-by-Covariate Interactions for Immunologic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
CD20 Cells	Exposure Index-by- Lifetime Cigarette Smoking History	0 pack-yrs. 0 cigs./day	n	20	19	18			
			Adj. Mean ^a	168.2	181.6	185.5	M vs. L	—	0.669
			95% C.I. ^a	(86.3, 328.1)	(93.7, 352.0)	(95.3, 361.3)	H vs. L	—	0.587
	Exposure Index-by- Current Cigarette Smoking (Officer)	>0-10 pack-yrs. 0 cigs./day	n	9	7	8			
			Adj. Mean ^a	194.7	217.5	175.8	M vs. L	—	0.692
			95% C.I. ^a	(94.9, 399.3)	(104.1, 454.4)	(85.2, 362.7)	H vs. L	—	0.701
		>0-10 pack-yrs. >0-20 cigs./day	n	2	3	1			
			Adj. Mean ^a	327.8	184.4	217.2	M vs. L	—	0.249
			95% C.I. ^a	(123.8, 867.8)	(77.1, 440.9)	—	H vs. L	—	0.537
		>0-10 pack-yrs. >20 cigs./day	n	0	1	1			
			Adj. Mean ^a	—	179.1	160.5	M vs. L	—	—
			95% C.I. ^a	—	—	—	H vs. L	—	—

TABLE P-4. (continued)

Exposure Index-by-Covariate Interactions for Immunologic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
CD20 Cells (continued)		>10 pack-yrs. 0 cigs./day	n	12	14	13			
			Adj. Mean ^a	202.8	239.6	211.9	M vs. L	—	0.452
			95% C.I. ^a	(101.1, 407.0)	(121.6, 472.1)	(105.9, 423.8)	H vs. L	—	0.845
		>10 pack-yrs. >0-20 cigs./day	n	3	4	5			
			Adj. Mean ^a	197.8	234.2	243.4	M vs. L	—	0.704
			95% C.I. ^a	(82.8, 472.6)	(126.5, 433.6)	(111.8, 530.0)	H vs. L	—	0.602
		>10 pack-yrs. >20 cigs./day	n	5	5	2			
			Adj. Mean ^a	397.9	245.1	497.7	M vs. L	—	0.164
			95% C.I. ^a	(182.6, 867.3)	(111.8, 537.4)	(184.7, 1,340.9)	H vs. L	—	0.631

TABLE P-4. (continued)

Exposure Index-by-Covariate Interactions for Immunologic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
CD20 Cells	Exposure Index-by- Lifetime Cigarette Smoking History (Enlisted Groundcrew)	0	n	9	15	9			
			Adj. Mean ^a	206.4	134.3	154.7	M vs. L	—	0.059
		>0-10	95% C.I. ^a	(142.2, 299.5)	(98.5, 183.0)	(106.4, 224.8)	H vs. L	—	0.254
			n	18	19	17			
			Adj. Mean ^a	227.5	179.5	158.0	M vs. L	—	0.181
			95% C.I. ^a	(172.5, 300.2)	(135.8, 237.2)	(120.4, 207.3)	H vs. L	—	0.049
		>10	n	15	30	21			
			Adj. Mean ^a	150.9	204.5	238.7	M vs. L	—	0.077
			95% C.I. ^a	(110.9, 205.4)	(162.6, 257.2)	(184.6, 308.5)	H vs. L	—	0.014

TABLE P-4. (continued)

Exposure Index-by-Covariate Interactions for Immunologic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
CD14 Cells	Exposure Index-by- Lifetime Cigarette Smoking History	≤10 pack-yrs. 0-1 dr./day	n	23	25	23			
			Adj. Mean ^a	29.4	19.5	24.8	M vs. L	—	0.036
			95% C.I. ^a	(21.3,40.5)	(14.2,26.6)	(18.2,33.8)	H vs. L	—	0.408
		≤10 pack-yrs. >1 dr./day	n	4	9	3			
			Adj. Mean ^a	29.9	17.9	25.3	M vs. L	—	0.220
			95% C.I. ^a	(15.0,59.4)	(11.0,29.3)	(11.5,55.9)	H vs. L	—	0.754
	Exposure Index-by- Current Alcohol Use (Enlisted Groundcrew)	>10 pack-yrs. 0-1 dr./day	n	14	24	20			
			Adj. Mean ^a	21.6	36.5	28.6	M vs. L	—	0.023
95% C.I. ^a			(14.4,32.2)	(26.6,49.9)	(20.6,39.8)	H vs. L	—	0.246	
CD25 Cells	Exposure Index-by- Lifetime Alcohol History (Officer)	0	n	5	0	5			
			Adj. Mean ^a	8.1	—	14.3	M vs. L	—	—
			95% C.I. ^a	(1.9,34.1)	—	(3.5,59.3)	H vs. L	—	0.399
		>0-40	n	29	27	19			
			Adj. Mean ^a	12.7	14.1	11.2	M vs. L	—	0.847
			95% C.I. ^a	(4.1,40.1)	(4.8,40.8)	(3.5,36.1)	H vs. L	—	0.687
		>40	n	5	10	6			
			Adj. Mean ^a	12.7	11.6	46.5	M vs. L	—	0.875
95% C.I. ^a			(2.8,56.8)	(3.1,43.1)	(11.6,185.7)	H vs. L	—	0.051	

TABLE P-4. (continued)

Exposure Index-by-Covariate Interactions for Immunologic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
HLA-DR Cells	Exposure Index-by- Lifetime Cigarette Smoking History (Enlisted Groundcrew)	0	n	9	15	9			
			Adj. Mean ^a 95% C.I. ^a	475.3 (370.7, 609.4)	325.4 (264.7, 400.0)	392.3 (305.7, 503.5)	M vs. L H vs. L	— —	0.013 0.256
		>0-10	n	18	19	17			
			Adj. Mean ^a 95% C.I. ^a	491.5 (408.6, 591.3)	426.4 (354.0, 513.6)	369.7 (308.4, 443.3)	M vs. L H vs. L	— —	0.229 0.022
		>10	n	15	30	22			
			Adj. Mean ^a 95% C.I. ^a	383.9 (312.5, 471.5)	476.9 (409.3, 555.7)	528.6 (446.7, 625.5)	M vs. L H vs. L	— —	0.059 0.010
CD4/CD8 Ratio	Exposure Index-by- Age (Officer)	Born >1942	n	16	8	6			
			Adj. Mean ^a 95% C.I. ^a	1.61 (0.96,2.72)	1.43 (0.80,2.56)	1.17 (0.65,2.13)	M vs. L H vs. L	— —	0.558 0.155
		Born 1923- 1941	n	32	37	39			
			Adj. Mean ^a 95% C.I. ^a	1.34 (0.82,2.21)	1.59 (1.00,2.53)	1.39 (0.85,2.27)	M vs. L H vs. L	— —	0.154 0.773
		Born <1922	n	3	8	2			
			Adj. Mean ^a 95% C.I. ^a	0.54 (0.27,1.10)	1.57 (0.89,2.76)	1.30 (0.58,2.88)	M vs. L H vs. L	— —	0.001 0.044

TABLE P-4. (continued)

Exposure Index-by-Covariate Interactions for Immunologic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
CD4/CD8 Ratio	Exposure Index-by- Current Alcohol Use (Enlisted Groundcrew)	0-1	n	37	48	42			
			Adj. Mean ^a	2.07	2.04	2.00	M vs. L	—	0.973
			95% C.I. ^a	(1.75,2.44)	(1.40,3.00)	(1.72,2.33)	H vs. L	—	0.719
		>1	n	5	15	4			
			Adj. Mean ^a	2.04	2.26	6.80	M vs. L	—	0.643
			95% C.I. ^a	(1.40,3.00)	(1.79,2.87)	(4.43,10.45)	H vs. L	—	0.067
P-31 TLC	Exposure Index-by- Lifetime Cigarette Smoking History (Enlisted Groundcrew)	0	n	9	15	9			
			Adj. Mean	1,955.1	1,836.5	1,813.1	M vs. L	—	0.587
			95% C.I.	(1,632.6, 2,341.3)	(1,597.2, 2,111.7)	(1,514.0, 2,171.2)	H vs. L	—	0.558
		>0-10	n	18	19	17			
			Adj. Mean	2,248.3	2,182.2	1,669.4	M vs. L	—	0.820
			95% C.I.	(1,863.8, 2,712.1)	(1,818.0, 2,619.2)	(1,376.4, 2,024.7)	H vs. L	—	0.031
		>10	n	16	30	22			
			Adj. Mean	2,023.0	2,219.4	2,402.0	M vs. L	—	0.273
			95% C.I.	(1,766.8, 2,316.4)	(2,010.5, 2,450.2)	(2,140.0, 2,696.1)	H vs. L	—	0.058

TABLE P-4. (continued)

Exposure Index-by-Covariate Interactions for Immunologic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
IgG	Exposure Index-by- Lifetime Cigarette Smoking History (Enlisted Groundcrew)	0	n	40	36	23			
			Adj. Mean	1,148.3	1,208.2	1,278.7	M vs. L	—	0.273
			95% C.I.	(1,065.0, 1,231.6)	(1,120.1, 1,296.5)	(1,173.5, 1,384.0)	H vs. L	—	0.036
		>0-10	n	42	51	38			
			Adj. Mean	1,097.9	1,138.8	1,134.2	M vs. L	—	0.409
			95% C.I.	(1,018.6, 1,177.2)	(1,063.7, 1,213.9)	(1,052.4, 1,215.9)	H vs. L	—	0.496
		>10	n	63	63	77			
			Adj. Mean	1,219.3	1,178.3	1,149.7	M vs. L	—	0.334
			95% C.I.	(1,150.2, 1,288.4)	(1,110.3, 1,246.3)	(1,084.1, 1,215.3)	H vs. L	—	0.086

TABLE P-4. (continued)

Exposure Index-by-Covariate Interactions for Immunologic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
IgA	Exposure Index-by- Current Cigarette Smoking (Officer)	0-Never	n	50	40	42			
			Adj. Mean ^a	232.97	196.15	184.98	M vs. L	—	0.085
			95% C.I. ^a	(203.99, 266.06)	(169.25, 227.31)	(160.21, 213.58)	H vs. L	—	0.019
		0-Former	n	49	54	49			
			Adj. Mean ^a	193.38	215.54	191.50	M vs. L	—	0.242
			95% C.I. ^a	(169.17, 221.06)	(189.84, 244.73)	(167.58, 218.84)	H vs. L	—	0.918
		>0-20	n	15	12	15			
			Adj. Mean ^a	183.69	221.82	222.53	M vs. L	—	0.300
			95% C.I. ^a	(144.34, 233.77)	(169.31, 290.62)	(174.95, 283.04)	H vs. L	—	0.261
		>20	n	11	13	12			
			Adj. Mean ^a	228.23	125.91	185.50	M vs. L	—	0.002
			95% C.I. ^a	(172.34, 302.25)	(97.24, 163.04)	(141.69, 242.87)	H vs. L	—	0.288

TABLE P-4. (continued)

Exposure Index-by-Covariate Interactions for Immunologic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
IgA	Exposure Index-by- Lifetime Alcohol History (Enlisted Groundcrew)	0	n	14	16	20			
			Adj. Mean ^a	185.66	176.66	211.80	M vs. L	—	0.756
			95% C.I. ^a	(147.07, 234.38)	(142.01, 219.75)	(174.24, 257.46)	H vs. L	—	0.386
		>0-40	n	99	106	87			
			Adj. Mean ^a	207.80	219.25	210.06	M vs. L	—	0.382
			95% C.I. ^a	(190.36, 226.85)	(201.17, 238.94)	(191.22, 230.76)	H vs. L	—	0.867
		>40	n	29	28	29			
			Adj. Mean ^a	217.97	256.64	206.75	M vs. L	—	0.159
			95% C.I. ^a	(185.17, 256.58)	(217.64, 302.63)	(175.77, 243.19)	H vs. L	—	0.645
Unstimulated PHA Response	Exposure Index-by- Lifetime Alcohol History	0 dr.-yrs. 0-1 dr./day.	n	4	4	8			
			Adj. Mean ^a	2,353	2,562	2,307	M vs. L	—	0.812
			95% C.I. ^a	(1,405, 3,940)	(1,553, 4,227)	(1,603, 3,320)	H vs. L	—	0.950
		>0-40 dr.-yrs. 0-1 dr./day.	n	26	36	27			
			Adj. Mean ^a	2,569	2,547	2,628	M vs. L	—	0.948
			95% C.I. ^a	(2,059, 3,206)	(2,055, 3,158)	(2,119, 3,259)	H vs. L	—	0.870
		>0-40 dr.-yrs. >1-4 dr./day.	n	1	9	1			
			Adj. Mean ^a	5,937	2,805	2,216	M vs. L	—	0.160
			95% C.I. ^a	—	(1,971, 3,991)	—	H vs. L	—	0.167

TABLE P-4. (continued)

Exposure Index-by-Covariate Interactions for Immunologic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
Unstimulated PHA Response (continued)		>40 dr.-yrs. 0-1 dr./day.	n	5	8	7			
			Adj. Mean ^a	3,708	1,767	3,112	M vs. L	—	0.012
			95% C.I. ^a	(2,310, 5,954)	(1,231, 2,536)	(2,083, 4,621)	H vs. L	—	0.556
		>40 dr.-yrs. >1-4 dr./day.	n	2	5	3			
			Adj. Mean ^a	1,890	2,369	1,712	M vs. L	—	0.598
			95% C.I. ^a	(926, 3,860)	(1,482, 3,787)	(948, 3,090)	H vs. L	—	0.831
PHA Net Response (day 2, conc. 1)	Exposure Index-by- Age (Enlisted Groundcrew)	>40 dr.-yrs. >4 dr./day.	n	2	1	1			
			Adj. Mean ^a	3,003	6,747	3,822	M vs. L	—	0.194
			95% C.I. ^a	(1,490, 6,053)	—	—	H vs. L	—	0.700
		Born ≥1942	n	22	49	28			
			Adj. Mean	177,023	154,723	173,610	M vs. L	—	0.238
			95% C.I.	(142,562, 211,520)	(127,613, 181,834)	(143,098, 207,069)	H vs. L	—	0.871
		Born <1942	n	18	14	18			
			Adj. Mean	153,835	175,083	150,914	M vs. L	—	0.414
			95% C.I.	(114,760, 192,909)	(132,610, 217,556)	(115,108, 186,719)	H vs. L	—	0.908

TABLE P-4. (continued)

Exposure Index-by-Covariate Interactions for Immunologic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
PHA Net Response (day 2, conc. 3)	Exposure Index-by- Current Cigarette Smoking (Officer)	0-Never	n	20	19	18			
			Adj. Mean	100,898	98,354	114,124	M vs. L	—	0.877
			95% C.I.	(42,669, 159,126)	(40,827, 155,881)	(56,017, 172,231)	H vs. L	—	0.424
		0-Former	n	21	22	20			
			Adj. Mean	130,372	118,974	94,234	M vs. L	—	0.455
			95% C.I.	(73,175, 188,289)	(62,060, 175,888)	(36,641, 151,826)	H vs. L	—	0.023
		>0-20	n	5	7	6			
			Adj. Mean	122,091	135,500	99,796	M vs. L	—	0.659
			95% C.I.	(53,335, 190,847)	(82,666, 188,334)	(33,370, 166,222)	H vs. L	—	0.462
		>20	n	4	6	3			
			Adj. Mean	81,091	178,503	109,587	M vs. L	—	0.003
			95% C.I.	(8,692, 153,490)	(111,665, 245,340)	(31,780, 187,393)	H vs. L	—	0.462
Unstimulated MLC Response	Exposure Index-by- Age (Enlisted Flyer)	Born >1942	n	4	6	3			
			Adj. Mean ^a	5,781.4	3,994.9	3,997.6	M vs. L	—	0.514
			95% C.I. ^a	(2,205.5, 15,155.0)	(1,771.8, 9,007.3)	(1,440.6, 11,093.7)	H vs. L	—	0.554
		Born <1942	n	16	17	21			
			Adj. Mean ^a	2,598.5	2,089.1	3,312.0	M vs. L	—	0.441
			95% C.I. ^a	(1,484.4, 4,548.8)	(1,187.9, 3,674.0)	(1,897.8, 5,780.2)	H vs. L	—	0.374

TABLE P-4. (continued)

Exposure Index-by-Covariate Interactions for Immunologic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
NRCA 50/1 Net Response	Exposure Index-by- Lifetime Cigarette Smoking History (Enlisted Flyer)	0	n	2	5	4			
			Adj. Mean	589.2	589.4	316.3	M vs. L	—	0.999
			95% C.I.	(342.8, 835.6)	(409.7, 769.1)	(125.3, 507.3)	H vs. L	—	0.051
		>0-10	n	6	5	8			
			Adj. Mean	376.8	571.4	453.9	M vs. L	—	0.066
			95% C.I.	(206.7, 546.8)	(417.2, 725.5)	(316.3, 591.5)	H vs. L	—	0.409
NRCA 50/1 Percent Release	Exposure Index-by- Age (Enlisted Groundcrew)	>10	n	11	14	13			
			Adj. Mean	475.1	402.9	500.0	M vs. L	—	0.289
			95% C.I.	(348.9, 601.3)	(275.2, 530.7)	(367.9, 632.1)	H vs. L	—	0.725
		Born ≥1942	n	24	48	27			
			Adj. Mean	37.8	35.0	35.6	M vs. L	—	0.411
			95% C.I.	(31.5,44.2)	(29.8,40.1)	(29.5,41.8)	H vs. L	—	0.574
		Born <1942	n	17	14	19			
			Adj. Mean	32.8	43.1	38.6	M vs. L	—	0.041
			95% C.I.	(25.2,40.3)	(35.0,51.2)	(32.0,45.3)	H vs. L	—	0.224

TABLE P-4. (continued)

Exposure Index-by-Covariate Interactions for Immunologic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
NRCI 50/1 Percent Release	Exposure Index-by- Age (Enlisted Groundcrew)	Born >1942	n	24	50	28			
			Adj. Mean	66.8	65.2	68.0	M vs. L	—	0.537
			95% C.I.	(61.9,71.8)	(61.2,69.1)	(63.3,72.7)	H vs. L	—	0.692
		Born <1942	n	17	14	20			
			Adj. Mean	64.9	71.4	66.8	M vs. L	—	0.094
			95% C.I.	(59.1,70.8)	(65.2,77.7)	(61.7,71.8)	H vs. L	—	0.615

—Adjusted relative risk not applicable for continuous analysis of a variable; summary statistics not presented.

^aTransformed from natural logarithm scale.

Note: Small sample sizes may affect validity of overall p-value. Unadjusted estimate of relative risk/confidence interval/p-value based on stratified tables for composite skin test diagnosis.

APPENDIX Q

Pulmonary Disease

TABLE Q-1.

Dependent Variable-Covariate Associations for Pulmonary Assessment

Dependent Variable	Level	Age				Race		
		Born ≥1942	Born 1923- 1941	Born ≤1922	p- Value	Black	Nonblack	p- Value
Asthma	Yes	(n=957) 4.8%	(n=1,252) 5.8%	(n=84) 2.4%	0.300	(n=137) 3.6%	(n=2,156) 5.3%	0.528
Bronchitis	Yes	(n=957) 17.3%	(n=1,251) 19.8%	(n=84) 15.5%	0.250	(n=137) 8.8%	(n=2,155) 19.3%	0.002
Pleurisy	Yes	(n=957) 5.1%	(n=1,248) 6.3%	(n=84) 10.7%	0.091	(n=137) 2.9%	(n=2,152) 6.1%	0.158
Pneumonia	Yes	(n=957) 18.4%	(n=1,252) 27.0%	(n=84) 32.1%	<0.001	(n=137) 15.3%	(n=2,156) 24.1%	0.020
Thorax and Lung Abnormalities	Yes	(n=957) 2.2%	(n=1,253) 8.5%	(n=84) 14.3%	<0.001	(n=137) 2.2%	(n=2,157) 6.3%	0.055
Hyperresonance	Yes	(n=957) 0.9%	(n=1,253) 4.5%	(n=84) 11.9%	<0.001	(n=137) 0.7%	(n=2,157) 3.4%	0.108
Wheezes	Yes	(n=957) 1.1%	(n=1,253) 3.3%	(n=84) 3.6%	0.004	(n=137) 0.7%	(n=2,157) 2.5%	0.298
Rales	Yes	(n=957) 0.1%	(n=1,253) 1.9%	(n=84) 6.0%	<0.001	(n=137) 0.0%	(n=2,157) 1.4%	0.312
X-Ray Interpretation	Abnormal	(n=951) 3.0%	(n=1,251) 6.6%	(n=84) 9.5%	<0.001	(n=137) 8.8%	(n=2,149) 5.0%	0.098

TABLE Q-1. (continued)

Dependent Variable-Covariate Associations for Pulmonary Assessment

Dependent Variable	Level	Age				Race		
		Born ≥1942	Born 1923- 1941	Born ≤1922	P- Value	Black	Nonblack	P- Value
FVC		--	(n=2,292) r=-0.094	--	<0.001	(n=137) x̄=85.7	(n=2,155) x̄=97.5	<0.001
FEV ₁		--	(n=2,292) r=-0.170	--	<0.001	(n=137) x̄=89.1	(n=2,155) x̄=98.2	<0.001
FEV ₂		--	(n=2,292) r=-0.140	--	<0.001	(n=137) x̄=85.9	(n=2,155) x̄=96.4	<0.001
FEV ₃		--	(n=2,292) r=-0.145	--	<0.001	(n=137) x̄=85.3	(n=2,155) x̄=96.3	<0.001
PEFmax		--	(n=2,292) r=-0.077	--	<0.001	(n=137) x̄=137.2	(n=2,155) x̄=137.1	0.978
Ratio of Observed FEV ₁ to Observed FVC ^a		--	(n=2,292) r=0.263	--	<0.001	(n=137) x̄=0.841	(n=2,155) x̄=0.812	<0.001
Loss of Vital Capacity		(n=957)	(n=1,251)	(n=84)	<0.001	(n=137)	(n=2,155)	<0.001
	None	93.0%	87.7%	86.9%		69.3%	91.2%	
	Mild	6.3%	9.8%	8.3%		24.1%	7.2%	
	Mod./Sev.	0.7%	2.6%	4.8%		6.6%	1.6%	

TABLE Q-1. (continued)

Dependent Variable-Covariate Associations for Pulmonary Assessment

Dependent Variable	Level	Age				Race		
		Born ≥1942	Born 1923- 1941	Born ≤1922	p- Value	Black	Nonblack	p- Value
Obstructive Abnormality		(n=957)	(n=1,251)	(n=84)	<0.001	(n=137)	(n=2,155)	0.315
	None	84.4%	62.4%	52.4%		76.6%	70.9%	
	Mild	14.4%	30.7%	38.1%		20.4%	24.4%	
	Mod./Sev.	1.1%	6.9%	9.5%		2.9%	4.7%	

TABLE Q-1. (continued)

Dependent Variable-Covariate Associations for Pulmonary Assessment

Dependent Variable	Level	Occupation			p-Value
		Officer	Enlisted Flyer	Enlisted Groundcrew	
Asthma	Yes	(n=874) 4.2%	(n=382) 6.8%	(n=1,037) 5.5%	0.149
Bronchitis	Yes	(n=873) 20.7%	(n=382) 17.8%	(n=1,037) 17.2%	0.123
Pleurisy	Yes	(n=872) 5.4%	(n=382) 8.1%	(n=1,035) 5.6%	0.141
Pneumonia	Yes	(n=874) 23.8%	(n=382) 27.2%	(n=1,037) 22.1%	0.127
Thorax and Lung Abnormalities	Yes	(n=874) 4.1%	(n=383) 11.2%	(n=1,037) 5.8%	<0.001
Hyperresonance	Yes	(n=874) 2.3%	(n=383) 6.0%	(n=1,037) 3.1%	0.003
Wheezes	Yes	(n=874) 1.6%	(n=383) 4.4%	(n=1,037) 2.3%	0.010
Rales	Yes	(n=874) 1.0%	(n=383) 2.6%	(n=1,037) 1.1%	0.048
X-Ray Interpretation	Abnormal	(n=872) 4.6%	(n=382) 8.1%	(n=1,032) 4.7%	0.020

TABLE Q-1. (continued)

Dependent Variable-Covariate Associations for Pulmonary Assessment

Dependent Variable	Level	Occupation			p-Value
		Officer	Enlisted Flyer	Enlisted Groundcrew	
FVC		(n=873) $\bar{x}=98.6$	(n=382) $\bar{x}=96.0$	(n=1,037) $\bar{x}=95.6$	<0.001
FEV ₁		(n=873) $\bar{x}=99.4$	(n=382) $\bar{x}=95.1$	(n=1,037) $\bar{x}=97.1$	<0.001
FEV ₂		(n=873) $\bar{x}=97.6$	(n=382) $\bar{x}=93.8$	(n=1,037) $\bar{x}=94.9$	<0.001
FEV ₃		(n=873) $\bar{x}=97.4$	(n=382) $\bar{x}=94.0$	(n=1,037) $\bar{x}=94.8$	<0.001
PEFmax		(n=873) $\bar{x}=140.8$	(n=382) $\bar{x}=135.3$	(n=1,037) $\bar{x}=134.7$	<0.001
Ratio of Observed FEV ₁ to Observed FVC ^a		(n=873) $\bar{x}=0.808$	(n=382) $\bar{x}=0.800$	(n=1,037) $\bar{x}=0.823$	<0.001
Loss of Vital Capacity		(n=873)	(n=382)	(n=1,037)	0.208
	None	91.6%	88.7%	88.8%	
	Mild	6.9%	9.7%	8.9%	
	Mod./Sev.	1.5%	1.6%	2.3%	

TABLE Q-1. (continued)

Dependent Variable-Covariate Associations for Pulmonary Assessment

Dependent Variable	Level	Occupation			p-Value
		Officer	Enlisted Flyer	Enlisted Groundcrew	
Obstructive Abnormality		(n=873)	(n=382)	(n=1,037)	<0.001
	None	70.6%	60.2%	75.9%	
	Mild	25.8%	32.7%	19.7%	
	Mod./Sev.	3.7%	7.1%	4.4%	

*Means transformed from natural logarithm (1-X) scale; correlations based on natural logarithm (1-X) versus covariate.

TABLE Q-1. (continued)

Dependent Variable-Covariate Associations for Pulmonary Assessment

Dependent Variable	Level	Current Cigarette Smoking					Lifetime Cigarette Smoking History			
		0-Never	0-Former	>0-20	>20	p-Value	0	>0-10	>10	p-Value
Asthma	Yes	(n=628) 4.1%	(n=906) 6.5%	(n=390) 5.1%	(n=369) 4.1%	0.137	(n=629) 4.1%	(n=633) 5.2%	(n=1,031) 5.9%	0.286
Bronchitis	Yes	(n=628) 15.8%	(n=905) 20.6%	(n=390) 15.4%	(n=369) 22.2%	0.009	(n=629) 15.7%	(n=632) 18.2%	(n=1,031) 20.7%	0.042
Pleurisy	Yes	(n=628) 4.5%	(n=905) 7.0%	(n=389) 4.4%	(n=367) 7.6%	0.052	(n=629) 4.5%	(n=633) 5.4%	(n=1,027) 7.2%	0.055
Pneumonia	Yes	(n=628) 20.7%	(n=906) 26.5%	(n=390) 18.7%	(n=369) 26.6%	0.003	(n=629) 20.7%	(n=633) 22.3%	(n=1,031) 26.2%	0.024
Thorax and Lung Abnormalities	Yes	(n=628) 1.3%	(n=907) 5.1%	(n=390) 10.3%	(n=369) 12.2%	<0.001	(n=629) 1.3%	(n=633) 4.6%	(n=1,032) 9.9%	<0.001
Hyperresonance	Abnormal	(n=628) 1.0%	(n=907) 2.3%	(n=390) 5.6%	(n=369) 7.0%	<0.001	(n=629) 1.0%	(n=633) 1.7%	(n=1,032) 5.6%	<0.001
Wheezes	Abnormal	(n=628) 0.3%	(n=907) 1.4%	(n=390) 3.9%	(n=369) 6.8%	<0.001	(n=629) 0.3%	(n=633) 2.2%	(n=1,032) 3.8%	<0.001
Rales	Abnormal	(n=628) 0.2%	(n=907) 1.5%	(n=390) 2.6%	(n=369) 1.4%	0.009	(n=629) 0.2%	(n=633) 0.5%	(n=1,032) 2.5%	<0.001
X-Ray Interpretation	Abnormal	(n=628) 3.0%	(n=900) 5.2%	(n=389) 8.0%	(n=369) 6.0%	0.006	(n=629) 2.9%	(n=628) 4.9%	(n=1,029) 6.5%	0.003
FVC		--	(n=2,292) r=-0.139	--	--	<0.001	--	(n=2,292) r=-0.200	--	<0.001

TABLE Q-1. (continued)

Dependent Variable-Covariate Associations for Pulmonary Assessment

Dependent Variable	Level	Current Cigarette Smoking					Lifetime Cigarette Smoking History			
		0-Never	0-Former	>0-20	>20	p-Value	0	>0-10	>10	p-Value
FEV ₁		--	(n=2,292) r=-0.230	--	--	<0.001	--	(n=2,292) r=-0.298	--	<0.001
FEV ₂		--	(n=2,292) r=-0.204	--	--	<0.001	--	(n=2,292) r=-0.271	--	<0.001
FEV ₃		--	(n=2,292) r=-0.183	--	--	<0.001	--	(n=2,292) r=-0.255	--	<0.001
FEFmax		--	(n=2,292) r=-0.239	--	--	<0.001	--	(n=2,292) r=-0.216	--	<0.001
Ratio of Observed FEV ₁ to Observed FVC*		--	(n=2,292) r=0.190	--	--	<0.001	--	(n=2,292) r=0.260	--	<0.001
Loss of Vital Capacity		(n=627)	(n=906)	(n=390)	(n=369)	0.001	(n=628)	(n=632)	(n=1,032)	<0.001
	None	93.6%	90.3%	86.4%	86.2%		93.6%	92.1%	86.2%	
	Mild	5.6%	7.9%	10.8%	10.8%		5.6%	6.6%	10.9%	
	Mod./Sev.	0.8%	1.8%	2.8%	3.0%		0.8%	1.3%	2.9%	
Obstructive Abnormality		(n=627)	(n=906)	(n=390)	(n=369)	<0.001	(n=628)	(n=632)	(n=1,032)	<0.001
	None	90.0%	69.9%	64.6%	49.9%		89.8%	74.4%	58.0%	
	Mild	9.1%	25.2%	30.0%	41.2%		9.2%	21.5%	34.9%	
	Mod./Sev.	1.0%	5.0%	5.4%	8.9%		1.0%	4.1%	7.1%	

*Means transformed from natural logarithm (1-X) scale; correlations based on natural logarithm (1-X) versus covariate.

Note: Correlations (r) are based on total sample and are not category specific.

TABLE Q-2.

Summary of Group-by-Covariate Interactions for Pulmonary Variables

Variable	Interaction	Stratification	Statistic	Group				Adj. Relative Risk (95% C.I.)	p-Value
				Ranch Hand		Comparison			
Pneumonia	Group-by-Lifetime Cigarette Smoking History	0	n	267		362		0.92 (0.62,1.37)	0.690
			Number/%						
			Yes	54	20.2%	76	21.0%		
		No	213	79.8%	286	79.0%	1.24 (0.85,1.81)	0.266	
		>0-10	n	272		361			
			Number/%						
			Yes	66	24.3%	75	20.8%		
		No	206	75.7%	286	79.2%	0.66 (0.50,0.88)	0.005	
		>10	n	456		575			
			Number/%						
Yes	100		21.9%	170	29.6%				
No	356	78.1%	405	70.4%					
Hyper-resonance	Group-by-Occupation	Officer	n	379		495		0.60 (0.23,1.58)	0.302
			Number/%						
			Yes	7	1.8%	13	2.6%		
		No	372	98.2%	482	97.4%	3.97 (1.48,10.64)	0.006	
		Enlisted Flyer	n	171		212			
			Number/%						
			Yes	17	9.9%	6	2.8%		
		No	154	90.1%	206	97.2%	1.13 (0.54,2.36)	0.746	
		Enlisted Groundcrew	n	445		592			
			Number/%						
Yes	16		3.6%	16	2.7%				
No	429	96.4%	576	97.3%					

TABLE Q-2. (continued)

Summary of Group-by-Covariate Interactions for Pulmonary Variables

Variable	Interaction	Stratification	Statistic	Group		Adj. Relative Risk (95% C.I.)	p-Value
				Ranch Hand	Comparison		
X-Ray Interpretation	Group-by-Race	Black	n	57	80		
			Number/%				
			Abnormal	8 14.0%	4 5.0%	3.27 (0.91,11.68)	0.068
			Normal	49 86.0%	76 95.0%		
		Nonblack	n	934	1,215		
			Number/%				
			Abnormal	40 4.3%	67 5.5%	0.72 (0.48,1.09)	0.119
			Normal	894 95.7%	1,148 94.5%		
FEV ₁	Group-by-Age	Born >1942	n	405	552		
			Adj. Mean	97.0	95.5	--	0.126
			95% C.I.	(95.0,98.9)	(93.7,97.3)		
		Born 1923-1941	n	553	698		
			Adj. Mean	90.0	91.9	--	0.022
			95% C.I.	(88.3,91.7)	(90.3,93.5)		
		Born <1922	n	35	49		
			Adj. Mean	92.4	86.8	--	0.081
			95% C.I.	(87.0,97.9)	(82.0,91.6)		

TABLE Q-2. (continued)

Summary of Group-by-Covariate Interactions for Pulmonary Variables

Variable	Interaction	Stratification	Statistic	Group		Adj. Relative Risk (95% C.I.)	p-Value
				Ranch Hand	Comparison		
FEV ₂	Group-by-Age	Born ≥1942	n	405	552	--	0.142
			Adj. Mean	94.0	92.7		
			95% C.I.	(92.2, 95.7)	(91.1, 94.3)		
		Born 1923- 1941	n	553	698	--	0.017
			Adj. Mean	88.1	90.0		
			95% C.I.	(86.6, 89.7)	(88.5, 91.4)		
		Born <1922	n	35	49	--	0.070
			Adj. Mean	91.1	85.7		
			95% C.I.	(86.1, 96.0)	(81.4, 90.1)		

--Adjusted relative risk not applicable for continuous analysis of a variable.

Note: Refer to Tables 20-4, 20-6, and 20-8 for specification of adjusted model.

TABLE Q-3.

Exposure Index-by-Covariate Interactions for Pulmonary Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value	
				Low		Medium		High					
Pleurisy	Exposure Index-by- Current Cigarette Smoking	0-Never, 0 Pack-Years	n	40		36		23		Overall		0.102	
			Number/%										
			Yes	2	5.0%	5	13.9%	0	0.0%	M vs. L	3.07 (0.56,16.89)	0.348	
				No	38	95.0%	31	86.1%	23	100.0%	H vs. L	— ^a	0.798
	Exposure Index-by- Lifetime Cigarette Smoking	0-Former, >0-10 Pack-Years	n	17		27		19		Overall		0.063	
			Number/%										
			Yes	3	17.6%	0	0.0%	1	5.3%	M vs. L	— ^a	0.103	
				No	14	82.4%	27	100.0%	18	94.7%	H vs. L	0.26 (0.02,2.77)	0.520
	History (Enlisted Groundcrew)	0-Former, >10 Pack-Years	n	23		29		27		Overall		0.152	
			Number/%										
			Yes	3	13.0%	0	0.0%	2	7.4%	M vs. L	— ^a	0.160	
				No	20	87.0%	29	100.0%	25	92.6%	H vs. L	0.53 (0.08,3.51)	0.844
		>0-20, 0 Pack-Years	n	0		1		0		Overall		— ^a	
			Number/%										
			Yes	0	—	0	0.0%	0	—	M vs. L	— ^a	— ^a	
				No	0	—	1	100.0%	0	—	H vs. L	— ^a	— ^a
		>0-20, >0-10 Pack-Years	n	18		18		14		Overall		0.404	
			Number/%										
			Yes	1	5.6%	0	0.0%	0	0.0%	M vs. L	— ^a	0.999	
				No	17	94.4%	18	100.0%	14	100.0%	H vs. L	— ^a	0.999
		>0-20, >10 Pack-Years	n	17		15		23		Overall		0.879	
			Number/%										
			Yes	2	11.8%	1	6.7%	2	8.7%	M vs. L	0.54 (0.04,6.58)	0.999	
				No	15	88.2%	14	93.3%	21	91.3%	H vs. L	0.71 (0.09,5.66)	0.999

TABLE Q-3. (continued)

Exposure Index-by-Covariate Interactions for Pulmonary Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value	
				Low		Medium		High					
Pleurisy (cont.)		>20, >0-10 Pack-Years	n	7		8		7		Overall		0.400	
			Number/%										
			Yes	0	0.0%	1	12.5%	0	0.0%	M vs. L	— ^a	0.999	
			No	7	100.0%	7	87.5%	7	100.0%	H vs. L	— ^a	— ^a	
		>20, >10 Pack-Years	n	24		24		27		Overall		0.990	
			Number/%										
Pneumonia	Exposure Index-by- Lifetime Cigarette Smoking History (Officer)	0	Yes	2	8.3%	2	8.3%	2	7.4%	M vs. L	1.00 (0.13,7.75)	0.999	
			No	22	91.7%	22	91.7%	25	92.6%	H vs. L	0.88 (0.11,6.78)	0.999	
		>0-10	n	52		43		43					
			Number/%										
			Yes	8	15.4%	7	16.3%	12	27.9%	M vs. L	0.96 (0.31,2.96)	0.949	
			No	44	84.6%	36	83.7%	31	72.1%	H vs. L	1.99 (0.72,5.48)	0.185	
			n	36		32		27					
			Number/%										
		>10	Yes	10	27.8%	5	15.6%	7	25.9%	M vs. L	0.43 (0.13,1.45)	0.172	
			No	26	72.2%	27	84.4%	20	74.1%	H vs. L	0.84 (0.22,3.17)	0.792	
			n	42		49		55					
Number/%													
Yes	9		21.4%	13	26.5%	12	21.8%	M vs. L	1.12 (0.41,3.00)	0.828			
No	33		78.6%	36	73.5%	43	78.2%	H vs. L	0.95 (0.29,3.14)	0.930			

TABLE Q-3. (continued)

Exposure Index-by-Covariate Interactions for Pulmonary Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low		Medium		High				
Pneumonia	Exposure Index-by- Race (Enlisted Flyer)	Black	n	1		4		3		Overall		0.018
			Number/%									
			Yes	1	100.0%	0	0.0%	0	0.0%	M vs. L	— ^a	0.400
		No	0	0.0%	4	100.0%	3	100.0%	H vs. L	— ^a	0.500	
		Nonblack	n	54		59		50		Overall		0.335
			Number/%									
			Yes	12	22.2%	14	23.7%	17	34.0%	M vs. L	1.09 (0.45,2.62)	0.999
			No	42	77.8%	45	76.3%	33	66.0%	H vs. L	1.80 (0.76,4.30)	0.262
Hyper- resonance	Exposure Index-by- Lifetime Cigarette Smoking History (Officer)		0	n	52		43		43		Overall	
		Number/%										
		Yes		1	1.9%	0	0.0%	0	0.0%	M vs. L	— ^a	0.999
		No	51	98.1%	43	100.0%	43	100.0%	H vs. L	— ^a	0.999	
		>0-10	n	36		32		27		Overall		0.437
			Number/%									
			Yes	1	2.8%	0	0.0%	0	0.0%	M vs. L	— ^a	0.999
			No	35	97.2%	32	100.0%	27	100.0%	H vs. L	— ^a	0.999
			>10	n	42		49		55		Overall	
		Number/%										
		Yes		2	4.8%	2	4.1%	1	1.8%	M vs. L	0.85 (0.12,6.32)	0.999
		No		40	95.2%	47	95.9%	54	98.2%	H vs. L	0.37 (0.03,4.23)	0.798

TABLE Q-3. (continued)

Exposure Index-by-Covariate Interactions for Pulmonary Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low		Medium		High				
Hyper- resonance	Exposure Index-by- Age (Enlisted Groundcrew)	Born >1942	n	83		123		81		Overall		0.339
			Number/%									
			Yes	0	0.0%	3	2.4%	1	1.2%	M vs. L	— ^a	0.422
		Born 1923- 1941	No	83	100.0%	120	97.6%	80	98.8%	H vs. L	— ^a	0.988
			n	60		34		53		Overall		0.274
			Number/%									
		Born 1923- 1941	Yes	4	6.7%	0	0.0%	4	7.5%	M vs. L	— ^a	0.320
			No	56	93.3%	34	100.0%	49	92.5%	H vs. L	1.14 (0.27,4.81)	0.999
			n	4		1		6		Overall		0.632
		Born <1922	Number/%									
			Yes	2	50.0%	0	0.0%	2	33.3%	M vs. L	— ^a	0.999
			No	2	50.0%	1	100.0%	4	66.7%	H vs. L	0.50 (0.04,6.68)	0.999
Wheezes	Exposure Index-by- Age (Enlisted Groundcrew)	Born >1942	n	83		123		81		Overall		0.200
			Number/%									
			Yes	1	1.2%	4	3.3%	0	0.0%	M vs. L	2.76 (0.30,25.11)	0.658
		Born 1923- 1941	No	82	98.8%	119	96.7%	81	100.0%	H vs. L	— ^a	0.999
			n	60		34		53		Overall		0.384
			Number/%									
		Born 1923- 1941	Yes	3	5.0%	0	0.0%	3	5.7%	M vs. L	— ^a	0.510
			No	57	95.0%	34	100.0%	50	94.3%	H vs. L	1.14 (0.22,5.91)	0.999
			n	4		1		6		Overall		0.361
		Born <1922	Number/%									
			Yes	0	0.0%	0	0.0%	2	33.3%	M vs. L	— ^a	— ^a
			No	4	100.0%	1	100.0%	4	66.7%	H vs. L	— ^a	0.666

TABLE Q-3. (continued)

Exposure Index-by-Covariate Interactions for Pulmonary Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
Q-16 FVC	Exposure Index-by- Lifetime Cigarette Smoking History (Enlisted Groundcrew)	0	n	40	37	23			
			Adj. Mean	93.5	88.6	90.1	H vs. L	—	0.084
			95% C.I.	(89.3,97.7)	(84.2,93.1)	(84.8,95.4)	H vs. L	—	0.289
		>0-10	n	42	53	40			
			Adj. Mean	91.1	91.5	90.3	H vs. L	—	0.882
			95% C.I.	(87.1,95.2)	(87.7,95.3)	(86.3,94.4)	H vs. L	—	0.767
		>10	n	65	68	77			
			Adj. Mean	88.0	90.7	90.4	H vs. L	—	0.213
			95% C.I.	(84.6,91.5)	(87.4,94.0)	(87.0,93.7)	H vs. L	—	0.256
FEV ₁	Exposure Index-by- Lifetime Cigarette Smoking History (Enlisted Groundcrew)	0	n	40	37	23			
			Adj. Mean	96.8	92.3	94.3	H vs. L	—	0.176
			95% C.I.	(91.6,102.1)	(86.8,97.8)	(87.8,100.9)	H vs. L	—	0.516
		>0-10	n	42	53	40			
			Adj. Mean	94.8	92.4	89.1	H vs. L	—	0.429
			95% C.I.	(89.9,99.8)	(87.8,97.1)	(84.2,94.1)	H vs. L	—	0.079
		>10	n	65	68	77			
			Adj. Mean	92.0	92.6	92.0	H vs. L	—	0.787
			95% C.I.	(87.5,96.4)	(88.6,96.6)	(87.9,96.1)	H vs. L	—	0.992

TABLE 0-3. (continued)

Exposure Index-by-Covariate Interactions for Pulmonary Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
0-17 FEV ₂	Exposure Index-by- Lifetime Cigarette Smoking History (Enlisted Groundcrew)	0	n	40	37	23			
			Adj. Mean	94.6	89.6	91.8	M vs. L	—	0.106
			95% C.I.	(90.0,99.1)	(84.8,94.4)	(86.1,97.6)	H vs. L	—	0.435
		>0-10	n	42	53	40			
			Adj. Mean	92.4	91.3	88.7	M vs. L	—	0.696
			95% C.I.	(88.0,96.8)	(87.2,95.4)	(84.3,93.1)	H vs. L	—	0.204
		>10	n	65	68	77			
			Adj. Mean	88.0	89.8	89.2	M vs. L	—	0.443
			95% C.I.	(84.2,91.8)	(86.2,93.4)	(85.6,92.8)	H vs. L	—	0.590
FEV ₃	Exposure Index-by- Lifetime Cigarette Smoking History (Enlisted Groundcrew)	0	n	40	37	23			
			Adj. Mean	93.7	88.9	91.0	M vs. L	—	0.103
			95% C.I.	(89.3,98.2)	(84.2,93.6)	(85.5,96.7)	H vs. L	—	0.428
		>0-10	n	42	53	40			
			Adj. Mean	91.5	91.1	89.1	M vs. L	—	0.865
			95% C.I.	(87.3,95.8)	(87.1,95.1)	(84.8,93.4)	H vs. L	—	0.391
		>10	n	65	68	77			
			Adj. Mean	87.7	89.7	89.1	M vs. L	—	0.388
			95% C.I.	(84.0,91.4)	(86.2,93.1)	(85.5,92.6)	H vs. L	—	0.532

TABLE Q-3. (continued)

Exposure Index-by-Covariate Interactions for Pulmonary Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
Q-18 FEF _{max}	Exposure Index-by- Lifetime Cigarette Smoking History (Officer)	0	n	51	43	43			
			Adj. Mean	140.2	139.6	141.2	H vs. L	—	0.898
			95% C.I.	(129.5,150.9)	(128.3,150.8)	(130.3,152.2)	H vs. L	—	0.826
		>0-10	n	36	32	27			
			Adj. Mean	138.4	143.2	132.7	H vs. L	—	0.402
			95% C.I.	(127.1,149.8)	(131.6,154.7)	(120.3,145.1)	H vs. L	—	0.332
		>10	n	42	49	55			
			Adj. Mean	130.8	129.4	139.9	H vs. L	—	0.783
			95% C.I.	(119.4,142.1)	(119.1,139.7)	(129.4,150.3)	H vs. L	—	0.057
FEF _{max}	Exposure Index-by- Race (Enlisted Groundcrew)	Black	n	16	14	12			
			Adj. Mean	130.6	134.2	149.9	H vs. L	—	0.671
			95% C.I.	(119.3,141.9)	(122.1,146.2)	(136.9,162.9)	H vs. L	—	0.028
		Nonblack	n	131	144	128			
			Adj. Mean	137.2	132.1	130.0	H vs. L	—	0.066
			95% C.I.	(133.3,141.1)	(128.3,135.8)	(126.0,134.0)	H vs. L	—	0.012

—Percentages not given due to zero participants for a particular exposure index classification; adjusted relative risk not applicable for continuous analysis of a variable.

—*Relative risk/confidence interval/p-value not given due to cells with zero frequency.

Notes: Unadjusted estimate of relative risk, confidence interval, and p-value are based on stratified tables, except for pneumonia for officers, due to the sparse number of abnormalities. All statistics for variables analyzed continuously are adjusted. Small sample sizes may affect validity of overall p-value.

APPENDIX R

Conclusions

TABLE R-1.

Summary of Unadjusted Group Contrast Results for Dichotomous Variables

Clinical Parameter	Reference Chapter	Percent Abnormal Group		Est. Relative Risk (95% C.I.)
		Ranch Hand	Comparison	
Self-Perception of Health	9	6.7	6.7	1.01 (0.72,1.40)
Appearance of Illness or Distress	9	0.9	0.5	1.68 (0.62,4.54)
Relative Age	9	5.5	5.8	0.94 (0.66,1.35)
Percent Body Fat	9	19.3	22.0	0.85 (0.69,1.04)
Sedimentation Rate	9	7.0	4.2	1.74 (1.21,2.51)
Malignant Skin (V)	10	9.7	7.2	1.38 (1.02,1.88)
Malignant Skin (VS)	10	9.8	7.7	1.30 (0.96,1.76)
Benign Skin (V,VS)	10	7.0	5.8	1.22 (0.87,1.73)
Uncertain Behavior or Unspecified Nature--Skin (V)	10	0.3	0.1	3.91 (0.41,37.63)
Uncertain Behavior or Unspecified Nature--Skin (VS)	10	0.3	0.2	1.95 (0.33,11.71)
All Skin (V)	10	16.7	12.8	1.37 (1.08,1.74)
All Skin (VS)	10	16.8	13.4	1.31 (1.04,1.66)
Basal Cell Carcinoma (V)	10	8.3	6.2	1.36 (0.98,1.89)
Basal Cell Carcinoma (VS)	10	8.4	6.6	1.29 (0.94,1.78)
Squamous Cell Carcinoma (V,VS)	10	0.6	0.4	1.56 (0.48,5.14)
Melanoma (V,VS)	10	0.4	0.3	1.30 (0.32,5.22)
Sun Exposure-Related (V)	10	9.4	6.9	1.40 (1.02,1.91)
Sun Exposure-Related (VS)	10	9.5	7.3	1.33 (0.98,1.81)
Basal Cell Carcinoma				
Ear, Face, Head, and Neck (V)	10	5.7	4.8	1.18 (0.80,1.72)
Ear, Face, Head, and Neck (VS)	10	5.8	5.1	1.14 (0.78,1.66)
Trunk (V)	10	2.3	1.6	1.44 (0.78,2.65)
Trunk (VS)	10	2.3	1.7	1.37 (0.75,2.51)
Upper Extremities (V,VS)	10	1.0	0.4	2.35 (0.79,7.04)
Lower Extremities (V,VS)	10	0.0	0.0	--
Other Sites (V)	10	0.4	0.2	2.61 (0.48,14.26)
Other Sites (VS)	10	0.4	0.2	1.74 (0.39,7.78)
Melanoma				
Ear, Face, Head, and Neck (V,VS)	10	0.1	0.0	--
Trunk (V,VS)	10	0.3	0.3	0.98 (0.22,4.37)
Upper Extremities (V,VS)	10	0.0	0.0	--
Lower Extremities (V,VS)	10	0.0	0.0	--
Other Sites (V,VS)	10	0.0	0.0	--

TABLE R-1. (continued)

Summary of Unadjusted Group Contrast Results for Dichotomous Variables

Clinical Parameter	Reference Chapter	Percent Abnormal Group		Est. Relative Risk (95% C.I.)
		Ranch Hand	Comparison	
<u>Sun Exposure-Related</u>				
Ear, Face, Head, and Neck (V)	10	6.4	5.2	1.25 (0.87,1.81)
Ear, Face, Head, and Neck (VS)	10	6.5	5.4	1.22 (0.85,1.74)
Trunk (V)	10	2.8	2.1	1.36 (0.78,2.37)
Trunk (VS)	10	2.8	2.1	1.31 (0.75,2.27)
Upper Extremities (V,VS)	10	1.3	0.4	3.15 (1.11,8.96)
Lower Extremities (V,VS)	10	0.0	0.0	--
Other Sites (V)	10	0.4	0.2	2.61 (0.48,14.26)
Other Sites (VS)	10	0.4	0.2	1.74 (0.39,7.78)
Malignant Systemic (V)	10	2.1	1.6	1.31 (0.71,2.42)
Malignant Systemic (VS)	10	2.1	1.8	1.20 (0.66,2.17)
Benign Systemic (V)	10	5.5	5.3	1.04 (0.73,1.50)
Benign Systemic (VS)	10	5.5	5.5	1.01 (0.71,1.45)
Uncertain Behavior or Unspecified Nature-- Systemic (V)	10	0.5	0.6	0.82 (0.27,2.50)
Uncertain Behavior or Unspecified Nature-- Systemic (VS)	10	0.7	0.9	0.83 (0.32,2.15)
All Systemic (V)	10	8.0	7.5	1.08 (0.80,1.48)
All Systemic (VS)	10	8.2	8.0	1.03 (0.76,1.40)
<u>Systemic Neoplasm: Location/Site</u>				
Oral Cavity, Pharynx, and Larynx (V,VS)	10	0.3	0.1	3.93 (0.41,37.79)
Thyroid (V,VS)	10	0.0	0.1	--
Bronchus and Lung (V)	10	0.3	0.2	1.31 (0.26,6.49)
Bronchus and Lung (VS)	10	0.3	0.3	0.98 (0.22,4.39)
Colon and Rectum (V,VS)	10	0.1	0.2	0.44 (0.05,4.18)
Kidney and Bladder (V,VS)	10	0.5	0.2	2.18 (0.52,9.15)
Prostate (V,VS)	10	0.2	0.4	0.52 (0.10,2.69)
Testicles (V,VS)	10	0.3	0.0	--
Hodgkin's Disease (V,VS)	10	0.0	0.1	--
Ill-Defined Sites (VS)	10	0.0	0.1	--
Thymus and Mediastinum (V,VS)	10	0.2	0.0	--
Head, Face, and Neck (V,VS)	10	0.0	0.1	--
Brain (V,VS)	10	0.0	0.1	--

TABLE R-1. (continued)

Summary of Unadjusted Group Contrast Results for Dichotomous Variables

Clinical Parameter	Reference Chapter	Percent Abnormal Group		Est. Relative Risk (95% C.I.)
		Ranch Hand	Comparison	
Other Malignant Neoplasms of Lymphoid and Histiocytic Tissue (V,VS)	10	0.2	0.1	2.61 (0.24,28.87)
Leukemia (V,VS)	10	0.1	0.0	--
Carcinoma In Situ of Penis (V,VS)	10	0.0	0.1	--
Carcinoma In Situ of Other Specified Sites (V,VS)	10	0.1	0.0	--
All Skin and Systemic Neoplasms (V)	10	22.5	18.8	1.26 (1.03,1.54)
All Skin and Systemic Neoplasms (VS)	10	22.8	19.7	1.20 (0.98,1.47)
Inflammatory Disease	11	0.5	0.2	3.24 (0.63,16.76)
Hereditary and Degenerative Disease	11	5.4	3.5	1.60 (1.07,2.39)
Peripheral Disorders	11	14.2	14.7	0.96 (0.76,1.21)
Disorders of the Eye	11	17.5	15.2	1.19 (0.95,1.48)
Tympanic Membrane Disorder of the Ear	11	5.0	4.5	1.11 (0.75,1.64)
Other Neurological Disorders	11	21.5	20.4	1.07 (0.87,1.31)
Smell	11	0.7	1.0	0.70 (0.28,1.76)
Visual Fields	11	0.2	0.5	0.37 (0.08,1.78)
Light Reaction	11	0.7	0.7	1.01 (0.38,2.72)
Ocular Movement	11	0.7	0.4	1.83 (0.58,5.77)
Facial Sensation	11	0.5	0.5	0.93 (0.29,2.94)
Corneal Reflex	11	0.0	0.0	--
Jaw Clench	11	0.2	0.0	--
Smile	11	0.7	0.8	0.91 (0.35,2.40)
Palpebral Fissure	11	1.4	1.4	1.01 (0.50,2.05)
Balance ^a	11	0.4	0.0	--
Gag Reflex	11	0.1	0.0	--
Speech	11	0.3	0.2	1.96 (0.33,11.73)
Tongue Position Relative to Midline	11	0.2	0.0	--
Palate and Uvula Movement	11	0.1	0.1	1.30 (0.08,20.86)
Neck Range of Motion	11	12.1	10.7	1.14 (0.88,1.48)
Cranial Nerve Index	11	15.5	14.5	1.08 (0.85,1.36)

TABLE R-1. (continued)

Summary of Unadjusted Group Contrast Results for Dichotomous Variables

Clinical Parameter	Reference Chapter	Percent Abnormal Group		Est. Relative Risk (95% C.I.)
		Ranch Hand	Comparison	
Cranial Nerve Index Without Range of Motion	11	4.3	4.5	0.95 (0.63,1.43)
Pin Prick	11	6.4	6.2	1.04 (0.74,1.46)
Light Touch	11	4.5	4.5	1.00 (0.67,1.50)
Muscle Status	11	2.4	2.0	1.21 (0.69,2.12)
Vibration	11	1.9	1.3	1.38 (0.71,2.70)
Patellar Reflex	11	1.6	1.6	0.99 (0.51,1.91)
Achilles Reflex	11	5.8	6.0	0.95 (0.67,1.35)
Biceps Reflex	11	0.2	1.2	0.17 (0.04,0.75)
Babinski Reflex	11	0.5	0.3	1.63 (0.44,6.08)
Tremor	11	3.5	2.5	1.44 (0.89,2.34)
Coordination	11	1.5	0.6	2.46 (1.04,5.83)
Romberg Sign ^a	11	0.4	0.0	--
Gait	11	3.2	2.6	1.23 (0.76,2.01)
CNS Index	11	6.7	5.0	1.37 (0.96,1.95)
Psychoses	12	2.2	2.5	0.87 (0.50,1.50)
Alcohol Dependence	12	8.1	6.1	1.37 (0.99,1.89)
Drug Dependence	12	0.1	0.4	0.26 (0.03,2.23)
Anxiety	12	16.1	15.0	1.09 (0.87,1.37)
Other Neuroses	12	40.6	36.6	1.19 (1.00,1.41)
Trouble Falling Asleep	12	10.5	11.8	0.87 (0.67,1.14)
Waking Up During Night	12	13.8	14.8	0.92 (0.73,1.17)
Waking Up Too Early and Can't Go Back to Sleep	12	11.4	10.7	1.07 (0.82,1.39)
Waking Up Unrefreshed	12	10.1	8.9	1.14 (0.86,1.51)
Involuntarily Falling Asleep During the Day	12	4.2	3.8	1.12 (0.74,1.71)
Great or Disabling Fatigue During the Day	12	3.8	2.2	1.80 (1.10,2.96)
Frightening Dreams	12	5.0	4.0	1.27 (0.85,1.89)
Talking in Sleep	12	4.8	3.1	1.60 (1.04,2.45)
Sleepwalking	12	2.3	1.5	1.51 (0.83,2.77)
Abnormal Movement/Activity During the Night	12	3.7	3.2	1.16 (0.74,1.81)
Sleep Problems Requiring Medication	12	2.6	1.8	1.43 (0.81,2.50)
Snore Loudly in All Sleeping Positions	12	7.6	6.9	1.12 (0.82,1.55)
Insomnia	12	23.5	24.1	0.97 (0.80,1.18)
Overall Sleep Disorder Index	12	35.3	33.9	1.06 (0.90,1.27)

TABLE R-1. (continued)

Summary of Unadjusted Group Contrast Results for Dichotomous Variables

Clinical Parameter	Reference Chapter	Percent Abnormal Group		Est. Relative Risk (95% C.I.)
		Ranch Hand	Comparison	
SCL-90-R				
Anxiety	12	7.6	5.9	1.31 (0.93,1.86)
Depression	12	9.8	7.6	1.33 (0.97,1.81)
Hostility	12	5.2	4.6	1.14 (0.76,1.72)
Interpersonal Sensitivity	12	6.6	6.4	1.03 (0.72,1.47)
Obsessive-Compulsive Behavior	12	8.4	7.6	1.11 (0.80,1.53)
Paranoid Ideation	12	4.5	3.7	1.23 (0.79,1.91)
Phobic Anxiety	12	6.9	7.0	0.99 (0.70,1.39)
Psychoticism	12	9.3	8.6	1.09 (0.80,1.49)
Somatization	12	10.7	8.2	1.33 (0.99,1.80)
GSI	12	8.9	6.7	1.36 (0.98,1.89)
PSDI	12	10.0	9.1	1.11 (0.82,1.49)
PST	12	8.3	6.8	1.25 (0.89,1.74)
Viral Hepatitis	13	38.7	40.6	0.93 (0.78,1.10)
Acute and Subacute Necrosis of the Liver	13	0.0	0.2	--
Chronic Liver Disease and Cirrhosis (Alcohol Related)	13	4.6	3.9	1.18 (0.79,1.78)
Chronic Liver Disease and Cirrhosis (Nonalcohol Related)	13	1.1	0.7	1.60 (0.66,3.88)
Liver Abscess and Sequelae of Chronic Liver Disease	13	0.0	0.1	--
Other Disorders of the Liver	13	9.1	7.4	1.26 (0.93,1.70)
Jaundice (Unspecified)	13	1.8	2.5	0.69 (0.38,1.24)
Hepatomegaly	13	1.6	1.9	0.83 (0.44,1.57)
Verified Ulcer	13	7.1	7.3	0.98 (0.71,1.35)
Skin Patches, Bruises, or Sensitivity	13	18.5	15.9	1.20 (0.96,1.49)
Diagnosed Hepatomegaly (Physical Examination)	13	1.1	1.2	0.96 (0.44,2.10)
AST	13	4.9	4.2	1.17 (0.78,1.74)
ALT	13	12.2	11.2	1.10 (0.85,1.42)
GGT	13	8.4	8.1	1.05 (0.77,1.41)
Alkaline Phosphatase	13	4.9	4.8	1.01 (0.69,1.49)

TABLE R-1. (continued)

Summary of Unadjusted Group Contrast Results for Dichotomous Variables

Clinical Parameter	Reference Chapter	Percent Abnormal Group		Est. Relative Risk (95% C.I.)
		Ranch Hand	Comparison	
Total Bilirubin	13	2.8	3.7	0.75 (0.47,1.21)
Direct Bilirubin	13	3.5	4.4	0.79 (0.52,1.22)
LDH	13	1.2	1.2	0.98 (0.46,2.08)
Cholesterol	13	14.3	12.3	1.19 (0.93,1.52)
HDL	13	0.9	1.0	0.90 (0.38,2.12)
Cholesterol-HDL Ratio	13	43.8	41.8	1.09 (0.92,1.29)
Triglycerides	13	6.7	5.4	1.25 (0.88,1.76)
Creatine Kinase	13	5.8	7.5	0.75 (0.54,1.06)
Fasting Glucose	13	12.2	13.0	0.93 (0.72,1.19)
Lifetime Occurrence of Acne	14	42.0	37.3	1.22 (1.03,1.44)
Comedones	14	21.4	22.9	0.92 (0.75,1.12)
Acneiform Lesions	14	10.2	11.2	0.90 (0.69,1.18)
Acneiform Scars	14	11.9	10.7	1.12 (0.87,1.46)
Depigmentation	14	6.6	6.4	1.04 (0.75,1.45)
Inclusion Cysts	14	10.6	10.5	1.01 (0.77,1.32)
Hyperpigmentation	14	14.7	16.8	0.85 (0.68,1.07)
Other Abnormalities	14	76.3	74.6	1.10 (0.90,1.33)
Reported/Verified Essential Hypertension	15	33.8	32.3	1.07 (0.89,1.29)
Reported Heart Disease	15	38.7	37.2	1.07 (0.89,1.28)
Verified Heart Disease	15	38.4	37.1	1.06 (0.88,1.26)
Reported/Verified Myocardial Infarction	15	4.4	4.6	0.96 (0.63,1.47)
Systolic Blood Pressure	15	19.4	20.5	0.93 (0.75,1.16)
Heart Sounds	15	4.0	4.6	0.86 (0.56,1.33)
ECG-Overall	15	15.7	17.8	0.86 (0.68,1.09)
RBBB	15	0.5	0.7	0.65 (0.20,2.18)
LBBB	15	0.1	0.4	0.33 (0.04,2.93)
Nonspecific T-Waves	15	10.6	11.3	0.93 (0.70,1.23)
Bradycardia	15	4.2	6.2	0.67 (0.44,1.00)
Tachycardia	15	0.0	0.1	--
Arrhythmia	15	4.7	3.4	1.40 (0.89,2.18)
ECG-Other Diagnosis	15	18.0	19.0	0.93 (0.74,1.17)
Diastolic Blood Pressure	15	4.9	4.3	1.16 (0.76,1.76)
Funduscope Examination	15	0.7	0.8	0.87 (0.31,2.46)
Carotid Bruits	15	1.0	0.4	2.97 (0.91,9.67)
Radial Pulses	15	0.2	0.8	0.29 (0.06,1.34)
Femoral Pulses	15	2.2	0.9	2.52 (1.16,5.44)
Popliteal Pulses	15	3.4	2.6	1.32 (0.78,2.22)

TABLE R-1. (continued)

Summary of Unadjusted Group Contrast Results for Dichotomous Variables

Clinical Parameter	Reference Chapter	Percent Abnormal Group		Est. Relative Risk (95% C.I.)
		Ranch Hand	Comparison	
Dorsalis Pedis Pulses	15	12.4	9.8	1.30 (0.98,1.72)
Posterior Tibial Pulses	15	3.5	2.6	1.18 (0.81,2.29)
Leg Pulses	15	15.3	12.2	1.30 (1.00,1.67)
Peripheral Pulses	15	15.4	12.7	1.26 (0.97,1.62)
All Pulses	15	15.4	12.7	1.26 (0.97,1.62)
RBC (Low vs. Normal)	16	3.7	3.7	1.00 (0.64,1.55)
RBC (High vs. Normal)	16	0.8	1.3	0.61 (0.26,1.42)
WBC (Low vs. Normal)	16	5.5	7.0	0.77 (0.54,1.09)
WBC (High vs. Normal)	16	5.1	5.8	0.86 (0.60,1.25)
Hemoglobin (Low vs. Normal)	16	4.0	3.9	1.04 (0.68,1.59)
Hemoglobin (High vs. Normal)	16	1.4	1.5	0.96 (0.48,1.93)
Hematocrit ^b	16	2.0	2.1	0.96 (0.54,1.73)
MCV (Low vs. Normal)	16	1.2	1.2	0.99 (0.46,2.10)
MCV (High vs. Normal)	16	11.1	10.1	1.10 (0.84,1.44)
MCH (Low vs. Normal)	16	0.7	0.5	1.30 (0.46,3.74)
MCH (High vs. Normal)	16	8.0	7.9	1.01 (0.74,1.37)
MCHC (Low vs. Normal)	16	0.0	0.0	--
MCHC (High vs. Normal)	16	0.0	0.0	--
Platelet Count ^c	16	2.9	1.6	1.92 (1.08,3.41)
History of Kidney Disease/Stones	17	10.9	11.0	0.98 (0.75,1.28)
Urinary Protein	17	4.7	4.6	1.02 (0.69,1.51)
Urinary Occult Blood	17	8.3	7.2	1.17 (0.86,1.59)
Urinary White Blood Cell Count	17	7.1	7.1	1.01 (0.73,1.39)
Current Thyroid Function (Self-Administered)	18	4.1	4.2	0.98 (0.65,1.47)
History of Thyroid Disease (Interviewer-Administered)	18	4.5	4.5	1.02 (0.68,1.51)
Thyroid Gland (Physical Examination)	18	26.2	25.9	1.02 (0.84,1.23)
Testes	18	3.3	3.4	0.98 (0.62,1.56)
T ₄ % Uptake	18	4.0	3.5	1.14 (0.73,1.76)
TSH	18	2.1	1.9	1.09 (0.60,1.99)
Testosterone	18	1.9	1.5	1.25 (0.67,2.36)
Composite Diabetes Indicator	18	9.3	8.8	1.07 (0.80,1.43)

TABLE R-1. (continued)

Summary of Unadjusted Group Contrast Results for Dichotomous Variables

Clinical Parameter	Reference Chapter	Percent Abnormal Group		Est. Relative Risk (95% C.I.)
		Ranch Hand	Comparison	
Skin Test	19	6.8	4.2	1.69 (1.11,2.58)
Asthma	20	5.8	4.8	1.23 (0.85,1.78)
Bronchitis	20	18.8	18.5	1.02 (0.83,1.26)
Pleurisy	20	6.0	5.9	1.03 (0.73,1.46)
Pneumonia	20	22.1	24.7	0.86 (0.71,1.05)
Tuberculosis	20	0.9	0.6	1.47 (0.57,3.83)
Thorax and Lungs	20	7.4	5.0	1.53 (1.08,2.15)
Asymmetric Expansion	20	0.0	0.1	--
Hyperresonance	20	4.0	2.7	1.51 (0.96,2.40)
Dullness	20	0.2	0.1	2.61 (0.24,28.87)
Wheezes	20	3.0	1.9	1.58 (0.93,2.71)
Rales	20	1.4	1.2	1.14 (0.56,2.36)
X Ray	20	4.8	5.5	0.88 (0.60,1.28)

V: Verified neoplastic conditions only.

VS: Verified and suspected neoplastic conditions combined.

^aBalance same as Romberg sign.

^bLow vs. normal/high.

^cHigh vs. normal/low.

TABLE R-2.

Summary of Unadjusted Group Contrast Results for Continuous Variables

Clinical Parameter	Reference Chapter	Group Mean		Percent Relative Difference	p-Value
		Ranch Hand	Comparison		
Percent Body Fat	9	21.46	21.67	-1.0	0.335
Sedimentation Rate (mm/hr) ^a	9	5.30	5.09	4.1	0.255
Average Sleep Each Night (hours)	12	6.91	6.95	-0.6	0.421
MMPI					
Schizoid Score ^a	12	24.7	24.2	2.1	0.408
Avoidant Score ^b	12	16.8	16.6	1.2	0.812
Dependent Score ^c	12	40.4	42.0	-3.8	0.048
Histrionic Score ^d	12	63.3	63.9	-0.9	0.318
Narcissistic Score	12	64.6	63.4	1.9	0.090
Antisocial Score	12	61.9	59.1	4.7	<0.001
Compulsive Score ^d	12	68.3	68.6	-0.4	0.408
Passive-Aggressive Score ^e	12	19.6	18.7	4.8	0.170
Schizotypal Score	12	34.3	34.4	-0.3	0.949
Borderline Score	12	32.7	33.4	-2.1	0.278
Paranoid Score	12	53.2	51.5	3.3	0.011
Anxiety Score	12	46.5	47.6	-2.3	0.200
Somatoform Score	12	50.9	51.5	-1.2	0.370
Hypomania Score ^c	12	21.4	21.1	1.4	0.736
Dysthymia Score	12	49.4	50.5	-2.2	0.242
Alcohol Abuse Score	12	31.5	30.8	2.3	0.376
Drug Abuse Score	12	47.9	47.1	1.7	0.353
Psychotic Thinking Score	12	32.1	32.1	0.0	0.952
Psychotic Depression Score	12	23.5	23.3	0.9	0.797
Psychotic Delusion Score	12	43.8	42.2	3.8	0.061
AST (U/L) ^a	13	25.8	25.6	0.8	0.695
ALT (U/L) ^a	13	20.6	20.7	-0.5	0.817
GGT (U/L) ^a	13	33.2	32.6	1.8	0.552
Alkaline Phosphatase (U/L) ^a	13	93.7	90.3	3.8	<0.001
Total Bilirubin (mg/dl) ^a	13	0.780	0.785	-0.6	0.611
Direct Bilirubin (mg/dl) ^a	13	0.158	0.158	0.0	0.969
LDH (U/L) ^a	13	128.1	127.8	0.2	0.692
Cholesterol (mg/dl) ^a	13	214.8	213.4	0.7	0.379
HDL (mg/dl)	13	49.08	49.18	-0.2	0.847
Cholesterol/HDL Ratio	13	4.75	4.70	1.1	0.357
Triglycerides (mg/dl) ^a	13	119.5	116.5	2.6	0.355
Creatine Kinase (U/L) ^a	13	110.0	108.8	1.1	0.611
Fasting Glucose (mg/dl) ^a	13	100.6	100.1	0.5	0.504
Systolic Blood Pressure (mm Hg)	15	127.06	126.87	0.1	0.809
Diastolic Blood Pressure (mm Hg)	15	75.18	74.50	0.9	0.099