

TABLE I-3. (continued)

Exposure Index-by-Covariate Interactions for Psychology Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
Average Sleep Each Night	Exposure Index-by- Current Alcohol Use (Officer)	0-1	n	100	91	96			
			Adj. Mean	6.76	6.66	6.79	M vs. L	—	0.421
			95% C.I.	(6.36,7.16)	(6.25,7.06)	(6.40,7.18)	H vs. L	—	0.836
		>1-4	n	24	30	26			
			Adj. Mean	6.75	7.28	6.95	M vs. L	—	0.033
			95% C.I.	(6.25,7.24)	(6.82,7.74)	(6.46,7.44)	H vs. L	—	0.430
		>4	n	4	0	2			
			Adj. Mean	6.81	—	7.32	M vs. L	—	—
			95% C.I.	(5.83,7.78)	—	(6.00,8.64)	H vs. L	—	0.516
Average Sleep Each Night	Exposure Index-by- Age (Enlisted Flyer)	Born >1942	n	10	17	10			
			Adj. Mean	6.54	7.06	5.73	M vs. L	—	0.308
			95% C.I.	(5.62,7.45)	(6.33,7.78)	(4.82,6.64)	H vs. L	—	0.161
		Born 1923-1941	n	43	43	40			
			Adj. Mean	6.70	6.52	6.98	M vs. L	—	0.518
			95% C.I.	(6.11,7.28)	(5.96,7.07)	(6.41,7.55)	H vs. L	—	0.318
		Born <1922	n	0	2	0			
			Adj. Mean	—	6.71	—	M vs. L	—	—
			95% C.I.	—	(4.90,8.53)	—	H vs. L	—	—

TABLE I-3. (continued)

Exposure Index-by-Covariate Interactions for Psychology Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
Average Sleep Each Night	Exposure Index-by- Age (Enlisted Groundcrew)	Born >1942	n	80	121	76			
			Adj. Mean	6.57	6.46	6.69	M vs. L	—	0.512
			95% C.I.	(6.29,6.85)	(6.21,6.71)	(6.40,6.98)	H vs. L	—	0.479
		Born 1923-1941	n	57	33	51			
			Adj. Mean	6.64	7.12	6.60	M vs. L	—	0.051
			95% C.I.	(6.31,6.97)	(6.71,7.52)	(6.25,6.94)	H vs. L	—	0.834
		Born <1922	n	4	1	6			
			Adj. Mean	7.09	4.82	6.69	M vs. L	—	0.069
			95% C.I.	(5.95,8.22)	(2.64,6.99)	(5.77,7.61)	H vs. L	—	0.583
SCL-90-R Depression	Exposure Index-by- Age (Enlisted Flyer)	Born >1942	n	9	13	9	Overall		0.295
			Number/% Abnormal	2 22.2%	3 23.1%	0 0.0%	M vs. L	1.05 (0.14,8.02)	0.999
			Normal	7 77.8%	10 76.9%	9 100.0%	H vs. L	—	0.470
		Born 1923-1941	n	39	38	36	Overall		0.140
			Number/% Abnormal	1 2.6%	2 5.3%	5 13.9%	M vs. L	2.11 (0.18,24.30)	0.980
			Normal	38 97.4%	36 94.7%	31 86.1%	H vs. L	6.13 (0.68,55.25)	0.165
		Born <1922	n	0	2	0	Overall		—
			Number/% Abnormal	0 —	0 0.0%	0 —	M vs. L	—	—
			Normal	0 —	2 100.0%	0 —	H vs. L	—	—

TABLE I-3. (continued)

Exposure Index-by-Covariate Interactions for Psychology Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value	
				Low		Medium		High					
SCL-90-R Obsessive- Compulsive Behavior	Exposure Index-by- Education	High School Born >1942 0-1	n	7		8		6		Overall		0.367	
			Number/%										
			Abnormal	2	28.6%	2	25.0%	0	0.0%	M vs. L	0.83 (0.08,8.24)	0.999	
				Normal	5	71.4%	6	75.0%	6	100.0%	H vs. L	—	0.538
	Exposure Index-by- Age	High School Born 1923-1941 0-1	n	26		23		22		Overall		0.315	
			Number/%										
			Abnormal	1	3.8%	0	0.0%	2	9.1%	M vs. L	—	0.999	
				Normal	25	96.2%	23	100.0%	20	90.9%	H vs. L	2.50 (0.21,29.60)	0.872
	Exposure Index-by- Current Alcohol Use (Enlisted Flyer)	High School Born 1923-1941 >1-4	n	3		6		7		Overall	—	—	
			Number/%										
			Abnormal	0	0.0%	0	0.0%	0	0.0%	M vs. L	—	—	
				Normal	3	100.0%	6	100.0%	7	100.0%	H vs. L	—	—
	High School Born 1923-1941 >4	n	2		2		1		Overall		—		
		Number/%											
		Abnormal	0	0.0%	0	0.0%	0	0.0%	M vs. L	—	—		
			Normal	2	100.0%	2	100.0%	1	100.0%	H vs. L	—	—	
	High School Born <1922 >1-4	n	0		1		0		Overall		—		
		Number/%											
		Abnormal	0	—	0	0.0%	0	—	M vs. L	—	—		
			Normal	0	—	1	100.0%	0	—	H vs. L	—	—	

TABLE I-3. (continued)

Exposure Index-by-Covariate Interactions for Psychology Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
SCL-90-R Obsessive- Compulsive Behavior (cont.)	College Born >1942 0-1	n		2	5	3	Overall		—
			Number/%						
			Abnormal	0 0.0%	0 0.0%	0 0.0%	M vs. L	—	—
		n		2 100.0%	5 100.0%	3 100.0%	H vs. L	—	—
			Normal						
	College Born 1923-1941 0-1	n		7	5	6	Overall		0.105
			Number/%						
			Abnormal	0 0.0%	0 0.0%	2 33.3%	M vs. L	—	—
		n		7 100.0%	5 100.0%	4 66.7%	H vs. L	—	0.384
			Normal						
	College Born 1923-1941 >1-4	n		1	2	0	Overall		—
			Number/%						
			Abnormal	0 0.0%	0 0.0%	0 —	M vs. L	—	—
		n		1 100.0%	2 100.0%	0 —	H vs. L	—	—
			Normal						
	College Born <1922 0-1	n		0	1	0	Overall		—
			Number/%						
			Abnormal	0 —	0 0.0%	0 —	M vs. L	—	—
		n		0 —	1 100.0%	0 —	H vs. L	—	—
			Normal						

TABLE I-3. (continued)

Exposure Index-by-Covariate Interactions for Psychology Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value		
				Low		Medium		High						
SCL-90-R Phobic Anxiety	Exposure Index-by- Education	High School 0-1	n	33		31		28		Overall		0.026		
			Number/%											
			Abnormal	1	3.0%	5	16.1%	0	0.0%	M vs. L	6.15 (0.68,56.01)	0.169		
	Normal	32	97.0%	26	83.9%	28	100.0%	H vs. L	0.999					
	Exposure Index-by- Current Alcohol Use (Enlisted Flyer)	High School >1-4	n	3		7		7		Overall		0.468		
			Number/%											
			Abnormal	0	0.0%	0	0.0%	1	14.3%	M vs. L	—			
			Normal	3	100.0%	7	100.0%	6	85.7%	H vs. L	—	0.999		
				High School >4	n	2		2		1		Overall		—
					Number/%									
			Abnormal		0	0.0%	0	0.0%	0	0.0%	M vs. L	—	—	
				Normal	2	100.0%	2	100.0%	1	100.0%	H vs. L	—	—	
					College 0-1	n	9		11		9		Overall	
			Number/%											
				Abnormal		0	0.0%	2	18.2%	2	22.2%	M vs. L	—	0.578
					Normal	9	100.0%	9	81.8%	7	77.8%	H vs. L	—	0.470
College >1-4		n			1		2		0		Overall		—	
		Number/%												
			Abnormal	0	0.0%	0	0.0%	0	—	M vs. L	—	—		
			Normal	1	100.0%	2	100.0%	0	—	H vs. L	—	—		

TABLE I-3. (continued)

Exposure Index-by-Covariate Interactions for Psychology Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
SCL-90-R Psychotic- ism	Exposure Index-by- Age	Born >1942 0-1 dr./day 0 dr.yrs.	n	1	1	1	Overall		0.223
			Number/%						
			Abnormal	0 0.0%	1 100.0%	0 0.0%	M vs. L	—	0.999
			Normal	1 100.0%	0 0.0%	1 100.0%	H vs. L	—	—
			n	5	6	6	Overall		0.313
			Number/%						
			Abnormal	1 20.0%	2 33.3%	0 0.0%	M vs. L	2.00 (0.13,31.98)	0.999
	Exposure Index-by- Current Alcohol Use	Born >1942 0-1 dr./day >0-40 dr.yrs.	Normal	4 80.0%	4 66.7%	6 100.0%	H vs. L	—	0.910
			n	3	6	2	Overall		0.361
			Number/%						
			Abnormal	0 0.0%	2 33.3%	0 0.0%	M vs. L	—	0.834
			Normal	3 100.0%	4 66.7%	2 100.0%	H vs. L	—	—
	Exposure Index-by- Lifetime Alcohol History (Enlisted Flyer)	Born 1923-1941 0-1 dr./day 0 dr.yrs.	n	4	3	6	Overall		0.478
			Number/%						
			Abnormal	0 0.0%	1 33.3%	1 16.7%	M vs. L	—	0.858
			Normal	4 100.0%	2 66.7%	5 83.3%	H vs. L	—	0.999
			n	24	19	18	Overall		—
			Number/%						
			Abnormal	0 0.0%	0 0.0%	0 0.0%	M vs. L	—	—
			Normal	24 100.0%	19 100.0%	18 100.0%	H vs. L	—	—
		Born 1923-1941 0-1 dr./day >0-40 dr.yrs.	n	5	6	4	Overall		0.042
			Number/%						
			Abnormal	0 0.0%	0 0.0%	2 50.0%	M vs. L	—	—
			Normal	5 100.0%	6 100.0%	2 50.0%	H vs. L	—	0.334

TABLE I-3. (continued)

Exposure Index-by-Covariate Interactions for Psychology Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low		Medium		High				
SCL-90-R Psychotic- ism (cont.)		Born	n	2		2		5		Overall		—
		1923-1941	Number/%									
		>1-4 dr./day	Abnormal	0	0.0%	0	0.0%	0	0.0%	M vs. L	—	—
		>0-40 dr.yrs.	Normal	2	100.0%	2	100.0%	5	100.0%	H vs. L	—	—
		Born	n	2		6		2		Overall		—
		1923-1941	Number/%									
		>1-4 dr./day	Abnormal	0	0.0%	0	0.0%	0	0.0%	M vs. L	—	—
		>40 dr.yrs.	Normal	2	100.0%	6	100.0%	2	100.0%	H vs. L	—	—
		Born	n	2		2		1		Overall		—
		1923-1941	Number/%									
		>4 dr./day	Abnormal	0	0.0%	0	0.0%	0	0.0%	M vs. L	—	—
		>40 dr.yrs.	Normal	2	100.0%	2	100.0%	1	100.0%	H vs. L	—	—
		Born <1922	n	0		1		0		Overall		—
		0-1 dr./day	Number/%									
		>0-40 dr.yrs.	Abnormal	0	—	0	0.0%	0	—	M vs. L	—	—
			Normal	0	—	1	100.0%	0	—	H vs. L	—	—
		Born <1922	n	0		1		0		Overall		—
		>1-4 dr./day	Number/%									
		>40 dr.yrs.	Abnormal	0	—	0	0.0%	0	—	M vs. L	—	—
			Normal	0	—	1	100.0%	0	—	H vs. L	—	—

TABLE I-3. (continued)

Exposure Index-by-Covariate Interactions for Psychology Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low		Medium		High				
SCL-90-R GSI	Exposure Index-by- Age (Officer)	Born ≥ 1942	n	42		13		10		Overall		0.757
			Number/%									
			Abnormal	1	2.4%	0	0.0%	0	0.0%	M vs. L	—	0.999
		Normal	41	97.6%	13	100.0%	10	100.0%	H vs. L	—	0.999	
		Born 1923-1941	n	62		78		97		Overall		0.393
			Number/%									
			Abnormal	0	0.0%	2	2.6%	3	3.1%	M vs. L	—	0.618
		Normal	62	100.0%	76	97.4%	94	96.9%	H vs. L	—	0.448	
		Born ≤ 1922	n	3		10		2		Overall		0.031
			Number/%									
			Abnormal	0	0.0%	0	0.0%	1	50.0%	M vs. L	—	—
Normal	3	100.0%	10	100.0%	1	50.0%	H vs. L	—	0.800			
SCL-90-R PSDI	Exposure Index-by- Age (Enlisted Groundcrew)	Born ≥ 1942	n	73		110		68		Overall		0.610
			Number/%									
			Abnormal	8	11.0%	15	13.6%	6	8.8%	M vs. L	1.28 (0.51,3.20)	0.768
		Normal	65	89.0%	95	86.4%	62	91.2%	H vs. L	0.79 (0.26,2.40)	0.890	
		Born 1923-1941	n	50		31		49		Overall		0.096
			Number/%									
			Abnormal	5	10.0%	0	0.0%	7	14.3%	M vs. L	—	0.165
		Normal	45	90.0%	31	100.0%	42	85.7%	H vs. L	1.50 (0.44,5.09)	0.730	
		Born ≤ 1922	n	4		1		5		Overall		0.490
			Number/%									
			Abnormal	2	50.0%	0	0.0%	1	20.0%	M vs. L	—	0.999
Normal	2	50.0%	1	100.0%	4	80.0%	H vs. L	0.25 (0.01,4.73)	0.810			

TABLE I-3. (continued)

Exposure Index-by-Covariate Interactions for Psychology Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low		Medium		High				
SCL-90-R PST	Exposure Index-by- Age (Officer)	Born ≥ 1942	n	42		13		10		Overall		0.757
			Number/%									
			Abnormal	1	2.4%	0	0.0%	0	0.0%	H vs. L	—	0.999
		Born 1923-1941	Normal	41	97.6%	13	100.0%	10	100.0%	H vs. L	—	0.999
			n	62		78		97		Overall		0.675
			Number/%									
		Born ≤ 1922	Abnormal	1	1.6%	1	1.3%	3	3.1%	H vs. L	0.79 (0.05,12.93)	0.999
			Normal	61	98.4%	77	98.7%	94	96.9%	H vs. L	1.95 (0.20,19.15)	0.984
			n	3		10		2		Overall		0.031
			Number/%									
			Abnormal	0	0.0%	0	0.0%	1	50.0%	H vs. L	—	—
			Normal	3	100.0%	10	100.0%	1	50.0%	H vs. L	—	0.800

TABLE I-3. (continued)

Exposure Index-by-Covariate Interactions for Psychology Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low		Medium		High				
SCL-90-R PST	Exposure Index-by- Age	Born >1942 High School	n	7		8		6		Overall		0.194
			Number/%	1	14.3%	3	37.5%	0	0.0%	M vs. L	3.60 (0.28,46.36)	0.676
			Abnormal Normal	6	85.7%	5	62.5%	6	100.0%	H vs. L	—	0.999
	Exposure Index-by- Education (Enlisted Flyer)	Born >1942 College	n	2		5		3		Overall		—
			Number/%	0	0.0%	0	0.0%	0	0.0%	M vs. L	—	—
			Abnormal Normal	2	100.0%	5	100.0%	3	100.0%	H vs. L	—	—
		Born 1923-1941 High School	n	31		31		30		Overall		0.370
			Number/%	1	3.2%	0	0.0%	0	0.0%	M vs. L	—	0.999
			Abnormal Normal	30	96.8%	31	100.0%	30	100.0%	H vs. L	—	0.999
		Born 1923-1941 College	n	8		7		6		Overall		0.211
			Number/%	0	0.0%	1	14.3%	2	33.3%	M vs. L	—	0.934
			Abnormal Normal	8	100.0%	6	85.7%	4	66.7%	H vs. L	—	0.330
		Born <1922 High School	n	0		1		0		Overall		—
			Number/%	0	—	0	0.0%	0	—	M vs. L	—	—
			Abnormal Normal	0	—	1	100.0%	0	—	H vs. L	—	—
		Born <1922 College	n	0		1		0		Overall		—
			Number/%	0	—	0	0.0%	0	—	M vs. L	—	—
			Abnormal Normal	0	—	1	100.0%	0	—	H vs. L	—	—

TABLE I-3. (continued)

Exposure Index-by-Covariate Interactions for Psychology Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
MMI Schizoid Score	Exposure Index-by- Race (Enlisted Groundcrew)	Black	n	15	14	12			
			Adj. Mean ^a	31.3	19.3	19.6	H vs. L	—	0.025
			95% C.I. ^a	(23.3,42.1)	(14.2,26.3)	(14.2,27.2)	H vs. L	—	0.039
		Nonblack	n	125	141	121			
			Adj. Mean ^a	24.9	27.8	25.3	H vs. L	—	0.117
			95% C.I. ^a	(22.4,27.6)	(25.1,30.8)	(22.7,28.2)	H vs. L	—	0.830
MMI Dependent Score	Exposure Index-by- Age (Officer)	Born ≥1942	n	46	20	10			
			Adj. Mean ^b	44.5	35.0	41.2	H vs. L	—	0.045
			95% C.I. ^b	(34.8,55.4)	(25.1,46.6)	(28.1,56.7)	H vs. L	—	0.599
		Born 1923-1941	n	77	87	111			
			Adj. Mean ^b	38.7	38.9	38.5	H vs. L	—	0.930
			95% C.I. ^b	(30.1,48.4)	(30.3,48.7)	(30.2,47.9)	H vs. L	—	0.953
		Born <1922	n	5	14	3			
			Adj. Mean ^b	62.0	39.6	69.5	H vs. L	—	0.032
			95% C.I. ^b	(41.9,86.0)	(28.1,53.0)	(43.8,101.1)	H vs. L	—	0.655

TABLE I-3. (continued)

Exposure Index-by-Covariate Interactions for Psychology Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
MMHI Histrionic Score	Exposure Index-by- Lifetime Alcohol History (Officer)	0	n	10	3	13			
			Adj. Mean ^c	57.8	37.1	63.6	M vs. L	—	0.080
			95% C.I. ^c	(44.3,68.7)	(0.0,59.1)	(53.0,72.7)	H vs. L	—	0.333
		>0-40	n	97	92	80			
			Adj. Mean ^c	62.4	61.5	62.2	M vs. L	—	0.646
			95% C.I. ^c	(54.7,69.3)	(53.7,68.4)	(54.4,69.2)	H vs. L	—	0.925
		>40	n	21	26	31			
			Adj. Mean ^c	61.0	66.9	65.2	M vs. L	—	0.154
			95% C.I. ^c	(51.8,69.0)	(58.3,74.5)	(57.3,72.3)	H vs. L	—	0.287
MMHI Histrionic Score	Exposure Index-by- Race (Enlisted Groundcrew)	Black	n	15	14	12			
			Adj. Mean ^c	61.2	74.7	73.6	M vs. L	—	0.005
			95% C.I. ^c	(53.1,68.4)	(68.0,80.9)	(66.1,80.4)	H vs. L	—	0.015
		Nonblack	n	125	141	121			
			Adj. Mean ^c	63.5	57.9	59.9	M vs. L	—	0.002
			95% C.I. ^c	(59.8,67.1)	(53.6,61.8)	(55.8,63.8)	H vs. L	—	0.046
MMHI Narcissistic Score	Exposure Index-by- Race (Enlisted Groundcrew)	Black	n	15	14	12			
			Adj. Mean	64.6	72.2	82.4	M vs. L	—	0.177
			95% C.I.	(56.9,72.4)	(64.2,80.2)	(73.9,91.0)	H vs. L	—	0.003
		Nonblack	n	125	141	121			
			Adj. Mean	64.6	63.0	63.1	M vs. L	—	0.393
			95% C.I.	(61.9,67.4)	(60.4,65.7)	(60.2,66.0)	H vs. L	—	0.431

TABLE I-3. (continued)

Exposure Index-by-Covariate Interactions for Psychology Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
MMI Borderline Score	Exposure Index-by- Lifetime Alcohol History (Officer)	0	n	10	3	13			
			Adj. Mean	29.0	29.0	34.1	M vs. L	—	0.992
			95% C.I.	(17.7,40.2)	(11.0,47.1)	(24.0,44.2)	H vs. L	—	0.421
		>0-40	n	97	92	80			
			Adj. Mean	34.3	30.6	33.4	M vs. L	—	0.095
			95% C.I.	(27.6,41.0)	(24.0,37.2)	(26.4,40.3)	H vs. L	—	0.689
		>40	n	21	26	31			
			Adj. Mean	45.4	30.6	36.5	M vs. L	—	0.001
			95% C.I.	(35.7,55.1)	(22.0,39.1)	(28.4,44.7)	H vs. L	—	0.041
MMI Borderline Score	Exposure Index-by- Education (Enlisted Groundcrew)	College	n	37	38	31			
			Adj. Mean	33.2	45.1	36.1	M vs. L	—	0.005
			95% C.I.	(26.2,40.3)	(37.6,52.5)	(28.7,43.6)	H vs. L	—	0.505
		High School	n	103	117	102			
			Adj. Mean	42.0	39.2	41.2	M vs. L	—	0.245
			95% C.I.	(36.6,47.4)	(33.7,44.6)	(35.8,46.6)	H vs. L	—	0.740
MMI Paranoid Score	Exposure Index-by- Age (Enlisted Flyer)	Born >1942	n	10	17	10			
			Adj. Mean	59.6	52.3	44.2	M vs. L	—	0.247
			95% C.I.	(48.4,70.8)	(43.4,61.2)	(33.1,55.4)	H vs. L	—	0.030
		Born 1923-1941	n	42	43	40			
			Adj. Mean	54.3	54.1	55.9	M vs. L	—	0.961
			95% C.I.	(47.0,61.5)	(47.3,60.9)	(48.9,62.9)	H vs. L	—	0.628
		Born <1922	n	0	2	0			
			Adj. Mean	—	31.2	—	M vs. L	—	—
			95% C.I.	—	(9.0,53.5)	—	H vs. L	—	—

TABLE I-3. (continued)

Exposure Index-by-Covariate Interactions for Psychology Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
MMHI Somatoform Score	Exposure Index-by- Education (Enlisted Groundcrew)	College	n	37	38	31			
			Adj. Mean	52.4	61.3	55.9	M vs. L	—	0.030
			95% C.I.	(46.2,58.6)	(55.1,67.6)	(49.5,62.4)	H vs. L	—	0.415
		High School	n	103	117	102			
			Adj. Mean	54.5	51.0	52.4	M vs. L	—	0.141
			95% C.I.	(50.4,58.6)	(47.0,54.9)	(48.1,56.7)	H vs. L	—	0.393
MMHI Alcohol Abuse Score	Exposure Index-by- Lifetime Alcohol History	0 dr.yrs. 0-1 dr./day	n	10	3	13			
			Adj. Mean	17.1	19.2	24.5	M vs. L	—	0.833
			95% C.I.	(5.8,28.4)	(1.0,37.3)	(14.5,34.6)	H vs. L	—	0.249
		>0-40 dr.yrs. 0-1 dr./day	n	85	81	70			
			Adj. Mean	28.7	28.1	28.1	M vs. L	—	0.795
			95% C.I.	(21.9,35.6)	(21.3,35.0)	(21.2,35.0)	H vs. L	—	0.803
		>0-40 dr.yrs. >1-4 dr./day	n	12	11	10			
			Adj. Mean	26.1	34.4	27.3	M vs. L	—	0.191
			95% C.I.	(16.1,36.0)	(24.4,44.3)	(16.1,38.4)	H vs. L	—	0.856

TABLE I-3. (continued)

Exposure Index-by-Covariate Interactions for Psychology Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
MMHI Alcohol Abuse Score (cont.)		>40 dr.yrs. 0-1 dr./day	n	5	7	13			
			Adj. Mean	43.4	29.8	36.1	M vs. L	—	0.125
			95% C.I.	(28.9,57.9)	(17.1,42.5)	(26.0,46.3)	H vs. L	—	0.362
		>40 dr.yrs. >1-4 dr./day	n	12	19	16			
			Adj. Mean	37.0	33.4	36.0	M vs. L	—	0.524
			95% C.I.	(26.4,47.6)	(24.4,42.5)	(26.8,45.2)	H vs. L	—	0.867
MMHI Drug Abuse Score	Exposure Index-by- Race (Enlisted Groundcrew)	Black	n	4	0	2			
			Adj. Mean	31.3	—	69.0	M vs. L	—	—
			95% C.I.	(15.2,47.3)	—	(47.2,90.8)	H vs. L	—	0.004
		Nonblack	n	15	14	12			
			Adj. Mean	45.4	60.9	72.3	M vs. L	—	0.038
			95% C.I.	(35.1,55.7)	(50.2,71.5)	(61.0,83.6)	H vs. L	—	0.001
MMHI Psychotic Thinking Score	Exposure Index-by- Age (Enlisted Flyer)	Born >1942	n	125	141	121			
			Adj. Mean	49.2	48.1	45.8	M vs. L	—	0.650
			95% C.I.	(45.6,52.9)	(44.6,51.6)	(42.0,49.7)	H vs. L	—	0.188
		Born 1923-1941	n	10	17	10			
			Adj. Mean	30.7	33.9	17.3	M vs. L	—	0.680
			95% C.I.	(16.9,44.5)	(22.9,44.8)	(3.5,31.0)	H vs. L	—	0.122
		Born 1923-1941	n	42	43	40			
			Adj. Mean	24.5	30.0	33.8	M vs. L	—	0.198
			95% C.I.	(15.6,33.5)	(21.6,38.4)	(25.1,42.4)	H vs. L	—	0.032
		Born <1922	n	0	2	0			
			Adj. Mean	—	2.8	—	M vs. L	—	—
			95% C.I.	—	(0,30.3)	—	H vs. L	—	—

TABLE I-3. (continued)

Exposure Index-by-Covariate Interactions for Psychology Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
MMI Psychotic Thinking Score	Exposure Index-by- Age (Enlisted Groundcrew)	Born ≥ 1942	n	79	121	76			
			Adj. Mean	36.6	40.0	37.6	M vs. L	—	0.229
			95% C.I.	(31.7, 41.5)	(35.5, 44.5)	(32.5, 42.7)	H vs. L	—	0.752
		Born 1923-1941	n	57	33	51			
			Adj. Mean	32.5	28.6	38.8	M vs. L	—	0.362
			95% C.I.	(26.7, 38.4)	(21.4, 35.8)	(32.7, 44.9)	H vs. L	—	0.097
MMI Psychotic Delusion Score	Exposure Index-by- Lifetime Alcohol History Exposure Index-by- Current Alcohol Use (Officer)	Born ≤ 1922	n	4	1	6			
			Adj. Mean	44.0	43.6	47.8	M vs. L	—	0.988
			95% C.I.	(23.9, 64.0)	—	(31.5, 64.0)	H vs. L	—	0.763
		0 dr.yrs. 0-1 dr./day	n	10	3	13			
			Adj. Mean	38.6	57.0	36.7	M vs. L	—	0.169
			95% C.I.	(23.3, 54.0)	(32.4, 81.6)	(23.0, 50.4)	H vs. L	—	0.826
		>0-40 dr.yrs. 0-1 dr./day	n	85	81	70			
			Adj. Mean	44.0	40.5	40.9	M vs. L	—	0.266
			95% C.I.	(34.5, 53.4)	(31.0, 49.9)	(31.1, 50.6)	H vs. L	—	0.353
		>0-40 dr.yrs. >1-4 dr./day	n	12	11	10			
			Adj. Mean	25.5	45.6	48.3	M vs. L	—	0.019
			95% C.I.	(11.9, 39.2)	(32.1, 59.2)	(33.0, 63.7)	H vs. L	—	0.010

TABLE I-3. (continued)

Exposure Index-by-Covariate Interactions for Psychology Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
MMI Psychotic Delusion Score (cont.)		>40 dr.yrs.	n	5	7	13			
		0-1 dr./day	Adj. Mean	50.5	30.2	44.9	H vs. L	—	0.091
			95% C.I.	(30.9,70.2)	(13.2,47.3)	(30.9,58.9)	H vs. L	—	0.594
		>40 dr.yrs.	n	12	19	16			
		>1-4 dr./day	Adj. Mean	44.2	37.9	40.3	H vs. L	—	0.406
			95% C.I.	(29.7,58.7)	(25.7,50.1)	(27.8,52.9)	H vs. L	—	0.617
		>40 dr.yrs.	n	4	0	2			
		>4 dr./day	Adj. Mean	40.8	—	75.5	H vs. L	—	—
			95% C.I.	(19.1,62.5)	—	(46.1,104.9)	H vs. L	—	0.048

—Summary statistics 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.

^aTransformed from natural logarithm scale.

^bTransformed from square root scale.

^cTransformed from square scale.

Notes: Small sample sizes may affect validity of overall p-value. Relative risks/confidence intervals and p-values based on stratified, unadjusted tables.

APPENDIX J

Gastrointestinal Assessment

TABLE J-1.

Dependent Variable-Covariate Associations for the Gastrointestinal Assessment

Dependent Variable	Level	Age				Race		
		Born ≥1942	Born 1923- 1941	Born ≤1922	p- Value	Black	Nonblack	p- Value
Hepatomegaly	Abnormal	(n=949) 0.8%	(n=1,246) 1.4%	(n=84) 0.0%	0.255	(n=134) 0.7%	(n=2,145) 1.2%	0.999
AST (continuous) ^a (discrete)	High	(n=948) 4.5%	(n=1,240) r=-0.001 4.5%	(n=84) 3.6%	0.973 0.918	(n=134) x̄=27.7 6.7%	(n=2,138) x̄=25.6 4.3%	0.004 0.286
ALT (continuous) ^a (discrete)	High	(n=948) 14.3%	(n=1,240) r=-0.109 10.0%	(n=84) 4.8%	<0.001 0.001	(n=134) x̄=20.7 10.4%	(n=2,138) x̄=20.6 11.7%	0.876 0.788
GGT (continuous) ^a (discrete)	High	(n=948) 8.0%	(n=1,240) -0.007 8.8%	(n=84) 2.4%	0.737 0.112	(n=134) x̄=44.1 14.9%	(n=2,138) x̄=32.3 7.8%	<0.001 0.011
Alkaline Phosphatase (continuous) ^a (discrete)	High	(n=948) 3.9%	(n=1,240) 0.007 7.1%	(n=84) 7.1%	0.054 0.163	(n=134) x̄=92.9 7.5%	(n=2,138) x̄=91.7 4.7%	0.615 0.220

TABLE J-1. (continued)

Dependent Variable-Covariate Associations for the Gastrointestinal Assessment

Dependent Variable	Level	Age				Race		
		Born ≥1942	Born 1923- 1941	Born ≤1922	p- Value	Black	Nonblack	p- Value
Total Bilirubin (continuous) ^b (discrete)	High	(n=948) 4.0%	(n=1,240) r=0.043 2.9%	(n=84) 2.4%	0.042 0.320	(n=134) x̄=0.76 4.5%	(n=2,138) x̄=0.78 3.3%	0.268 0.580
Direct Bilirubin (continuous) ^b (discrete)	High	(n=948) 4.1%	(n=1,240) r=0.008 4.3%	(n=84) 0.0%	0.695 0.156	(n=134) x̄=0.15 6.0%	(n=2,138) x̄=0.16 3.9%	0.511 0.342
LDH (continuous) ^a (discrete)	High	(n=948) 1.2%	(n=1,240) r=0.102 1.2%	(n=84) 2.4%	<0.001 0.620	(n=134) x̄=131.2 0.8%	(n=2,138) x̄=127.7 1.3%	0.135 0.999
Cholesterol (continuous) ^a (discrete)	High	(n=948) 11.0%	(n=1,240) r=0.079 15.0%	(n=84) 10.7%	<0.001 0.018	(n=134) x̄=211.2 10.4%	(n=2,138) x̄=214.2 13.3%	0.391 0.414
HDL (continuous) (discrete)	Low	(n=948) x̄=47.13 0.8%	(n=1,240) x̄=46.80 1.1%	(n=84) x̄=47.17 1.2%	0.809 0.870	(n=134) x̄=51.13 0.0%	(n=2,138) x̄=46.69 1.0%	<0.001 0.238
Cholesterol-HDL Ratio (continuous) (discrete)	High	(n=948) x̄=4.80 41.0%	(n=1,240) x̄=4.99 44.1%	(n=84) x̄=4.84 39.3%	0.009 0.289	(n=134) x̄=4.51 34.3%	(n=2,138) x̄=4.93 43.2%	0.001 0.045

TABLE J-1. (continued)

Dependent Variable-Covariate Associations for the Gastrointestinal Assessment

Dependent Variable	Level	Age				Race		
		Born ≥1942	Born 1923- 1941	Born ≤1922	p- Value	Black	Nonblack	p- Value
Triglycerides (continuous) ^a (discrete)	High	(n=948) 5.1%	(n=1,240) r=0.055 6.8%	(n=84) 4.8%	0.009 0.220	(n=134) x̄=96.1 3.0%	(n=2,138) x̄=119.3 6.2%	<0.001 0.170
Creatine Kinase (continuous) ^a (discrete)	High	(n=948) 7.2%	(n=1,240) r=-0.074 6.5%	(n=84) 6.0%	<0.001 0.801	(n=134) x̄=197.5 34.3%	(n=2,138) x̄=105.4 5.1%	<0.001 <0.001
Fasting Glucose (continuous) ^a (discrete)	High	(n=948) 5.3%	(n=1,240) r=0.195 17.4%	(n=84) 25.0%	<0.001 <0.001	(n=134) x̄=101.6 17.2%	(n=2,138) x̄=100.2 12.3%	0.322 0.143

TABLE J-1. (continued)

Dependent Variable-Covariate Associations
for Gastrointestinal Assessment

Dependent Variable	Level	Occupation			p-Value
		Officer	Enlisted Flyer	Enlisted Groundcrew	
Hepatomegaly	Abnormal	(n=867) 1.2%	(n=381) 0.3%	(n=1,031) 1.5%	0.173
AST (continuous) ^a (discrete)	High	(n=863) $\bar{x}$ =25.9 4.9%	(n=380) $\bar{x}$ =25.2 3.9%	(n=1,029) $\bar{x}$ =25.7 4.4%	0.395 0.749
ALT (continuous) ^a (discrete)	High	(n=863) $\bar{x}$ =20.4 11.8%	(n=380) $\bar{x}$ =20.4 9.7%	(n=1,029) $\bar{x}$ =20.9 12.1%	0.427 0.444
GGT (continuous) ^a (discrete)	High	(n=863) $\bar{x}$ =31.9 7.8%	(n=380) $\bar{x}$ =34.6 11.1%	(n=1,029) $\bar{x}$ =33.1 7.6%	0.152 0.089
Alkaline Phosphatase (continuous) ^a (discrete)	High	(n=863) $\bar{x}$ =87.6 3.5%	(n=380) $\bar{x}$ =95.6 5.5%	(n=1,029) $\bar{x}$ =93.9 5.7%	<0.001 0.059

TABLE J-1. (continued)

Dependent Variable-Covariate Associations
for Gastrointestinal Assessment

Dependent Variable	Level	Occupation			p-Value
		Officer	Enlisted Flyer	Enlisted Groundcrew	
Total Bilirubin (continuous) ^b (discrete)	High	(n=863) $\bar{x}$ =0.80 3.4%	(n=380) $\bar{x}$ =0.77 3.7%	(n=1,029) $\bar{x}$ =0.77 3.2%	0.035 0.906
Direct Bilirubin (continuous) ^b (discrete)	High	(n=863) $\bar{x}$ =0.17 4.2%	(n=380) $\bar{x}$ =0.15 6.1%	(n=1,029) $\bar{x}$ =0.16 3.2%	0.022 0.054
LDH (continuous) ^a (discrete)	High	(n=863) $\bar{x}$ =127.9 1.6%	(n=380) $\bar{x}$ =127.0 1.3%	(n=1,029) $\bar{x}$ =128.2 0.9%	0.662 0.336
Cholesterol (continuous) ^a (discrete)	High	(n=863) $\bar{x}$ =212.8 12.1%	(n=380) $\bar{x}$ =219.5 17.4%	(n=1,029) $\bar{x}$ =213.0 12.5%	0.012 0.028
HDL (continuous) (discrete)	Low	(n=863) $\bar{x}$ =48.23 0.7%	(n=380) $\bar{x}$ =46.13 1.6%	(n=1,029) $\bar{x}$ =46.18 1.0%	<0.001 0.342
Cholesterol-HDL Ratio (continuous) (discrete)	High	(n=863) $\bar{x}$ =4.73 38.5%	(n=380) $\bar{x}$ =5.13 48.4%	(n=1,029) $\bar{x}$ =4.96 44.0%	<0.001 0.002

TABLE J-1. (continued)

Dependent Variable-Covariate Associations
for Gastrointestinal Assessment

Dependent Variable	Level	Occupation			p-Value
		Officer	Enlisted Flyer	Enlisted Groundcrew	
Triglycerides (continuous) ^a (discrete)	High	(n=863) $\bar{x}$ =111.7	(n=380) $\bar{x}$ =126.5	(n=1,029) $\bar{x}$ =119.9	0.003
		5.8%	6.3%	6.0%	0.936
Creatine Kinase (continuous) ^a (discrete)	High	(n=863) $\bar{x}$ =108.5	(n=380) $\bar{x}$ =106.4	(n=1,029) $\bar{x}$ =111.2	0.295
		6.3%	7.1%	7.1%	0.742
Fasting Glucose (continuous) ^a (discrete)	High	(n=863) $\bar{x}$ =100.9	(n=380) $\bar{x}$ =100.8	(n=1,029) $\bar{x}$ =99.6	0.156
		13.3%	14.2%	11.5%	0.287

TABLE J-1. (continued)

Dependent Variable-Covariate Associations for the Gastrointestinal Assessment

Dependent Variable	Level	Current Alcohol Use				Lifetime Alcohol History			
		0-1	>1-4	>4	p-Value	0	>0-40	>40	p-Value
Hepatomegaly	Abnormal	(n=1,804) 0.9%	(n=395) 1.8%	(n=74) 4.1%	0.019	(n=205) 2.0%	(n=1,548) 0.7%	(n=573) 2.1%	0.016
AST (continuous) ^a (discrete)	High	(n=1,799) 2.8%	(n=394) r=0.220 9.6%	(n=73) 19.2%	<0.001 <0.001	(n=205) 3.9%	(n=1,543) r=0.096 3.2%	(n=511) 8.4%	<0.001 <0.001
ALT (continuous) ^a (discrete)	High	(n=1,799) 10.2%	(n=394) r=0.125 17.0%	(n=73) 19.2%	<0.001 <0.001	(n=205) 14.2%	(n=1,543) r=0.011 10.1%	(n=511) 15.5%	0.591 0.007
GGT (continuous) ^a (discrete)	High	(n=1,799) 5.6%	(n=394) r=0.271 16.5%	(n=73) 28.8%	<0.001 <0.001	(n=205) 7.8%	(n=1,543) r=0.110 6.0%	(n=511) 14.9%	<0.001 <0.001
Alkaline Phosphatase* (continuous) ^a (discrete)	High	(n=1,314) 5.9%	(n=950) r=-0.048 3.4%	— —	0.023 0.006	(n=1,145) 6.3%	(n=1,022) r=-0.071 3.5%	(n=96) 2.1%	<0.001 0.005
Total Bilirubin (continuous) ^b (discrete)	High	(n=1,799) 3.3%	(n=394) r=0.035 3.8%	(n=73) 1.4%	0.092 0.566	(n=205) 2.9%	(n=1,543) r=0.006 3.5%	(n=511) 3.1%	0.777 0.864
Direct Bilirubin (continuous) ^b (discrete)	High	(n=1,799) 3.7%	(n=394) r=0.040 6.1%	(n=73) 2.7%	0.059 0.074	(n=205) 2.4%	(n=1,543) r=0.014 3.9%	(n=511) 5.3%	0.501 0.178

TABLE J-1. (continued)

Dependent Variable-Covariate Associations for the Gastrointestinal Assessment

Dependent Variable	Level	Current Alcohol Use				Lifetime Alcohol History			
		0-1	>1-4	>4	p-Value	0	>0-40	>40	p-Value
LDH (continuous) ^a (discrete)	High	(n=1,799) 1.1%	(n=394) r=0.016 1.5%	(n=73) 4.1%	0.443 0.058	(n=205) 0.5%	(n=1,543) r=0.013 1.0%	(n=511) 2.4%	0.539 0.031
Cholesterol (continuous) ^a (discrete)	High	(n=1,799) 12.7%	(n=394) r=0.048 13.7%	(n=73) 21.9%	0.023 0.068	(n=205) 12.2%	(n=1,543) r=0.013 13.3%	(n=511) 13.1%	0.550 0.910
HDL (continuous) (discrete)	Low	(n=1,799) $\bar{x}$ =45.50 1.1%	(n=394) $\bar{x}$ =51.35 0.5%	(n=73) $\bar{x}$ =58.71 1.4%	<0.001 0.567	(n=205) $\bar{x}$ =43.85 1.0%	(n=1,543) $\bar{x}$ =46.62 0.9%	(n=511) $\bar{x}$ =49.14 1.0%	<0.001 0.987
Cholesterol-HDL Ratio (continuous) (discrete)	High	(n=1,799) $\bar{x}$ =5.00 45.4%	(n=394) $\bar{x}$ =4.60 35.0%	(n=73) $\bar{x}$ =4.16 16.4%	<0.001 <0.001	(n=205) $\bar{x}$ =5.13 46.3%	(n=1,543) $\bar{x}$ =4.93 43.4%	(n=511) $\bar{x}$ =4.75 38.9%	0.003 0.112
Triglycerides (continuous) ^a (discrete)	High	(n=1,799) 5.7%	(n=394) r=0.002 6.9%	(n=73) 6.9%	0.936 0.657	(n=205) 5.4%	(n=1,543) r=0.026 5.4%	(n=511) 7.6%	0.224 0.181
Creatine Kinase (continuous) ^a (discrete)	High	(n=1,799) 7.0%	(n=394) r=-0.014 5.8%	(n=73) 5.5%	0.499 0.640	(n=205) 5.4%	(n=1,543) r=-0.040 7.5%	(n=511) 5.3%	0.055 0.168
Fasting Glucose (continuous) ^a (discrete)	High	(n=1,799) 12.1%	(n=394) r=0.032 15.0%	(n=73) 15.1%	0.125 0.238	(n=205) 13.2%	(n=1,543) r=0.067 9.9%	(n=511) 20.7%	0.002 <0.001

TABLE J-1. (continued)

Dependent Variable-Covariate Associations for the Gastrointestinal Assessment

Dependent Variable	Level	Industrial Chemical Exposure			Degreasing Chemical Exposure		
		Yes	No	p-Value	Yes	No	p-Value
Hepatomegaly	Abnormal	(n=1,252) 1.0%	(n=1,027) 1.4%	0.478	(n=1,371) 1.1%	(n=908) 1.2%	0.944
AST (continuous) ^a (discrete)	High	(n=1,250) $\bar{x}$ =25.5 4.3%	(n=1,022) $\bar{x}$ =25.9 4.7%	0.224 0.740	(n=1,368) $\bar{x}$ =25.8 5.1%	(n=904) $\bar{x}$ =25.5 3.5%	0.443 0.091
ALT (continuous) ^a (discrete)	High	(n=1,250) $\bar{x}$ =20.6 11.4%	(n=1,022) $\bar{x}$ =20.7 11.8%	0.781 0.818	(n=1,368) $\bar{x}$ =21.0 11.9%	(n=904) $\bar{x}$ =20.1 11.2%	0.032 0.638
GGT (continuous) ^a (discrete)	High	(n=1,250) $\bar{x}$ =32.5 8.1%	(n=1,022) $\bar{x}$ =33.2 8.4%	0.414 0.830	(n=1,368) $\bar{x}$ =33.6 8.6%	(n=904) $\bar{x}$ =31.9 7.7%	0.068 0.544
Alkaline Phosphatase (continuous) ^a (discrete)	High	(n=1,250) $\bar{x}$ =93.1 5.9%	(n=1,022) $\bar{x}$ =90.1 3.5%	0.001 0.010	(n=1,368) $\bar{x}$ =92.5 5.5%	(n=904) $\bar{x}$ =90.6 3.9%	0.050 0.096

TABLE J-1. (continued)

Dependent Variable-Covariate Associations for the Gastrointestinal Assessment

Dependent Variable	Level	Industrial Chemical Exposure			Degreasing Chemical Exposure		
		Yes	No	p-Value	Yes	No	p-Value
Total Bilirubin (continuous) ^b (discrete)	High	(n=1,250) $\bar{x}=0.78$ 4.0%	(n=1,022) $\bar{x}=0.78$ 2.5%	0.757 0.069	(n=1,368) $\bar{x}=0.78$ 3.2%	(n=904) $\bar{x}=0.79$ 3.5%	0.374 0.758
Direct Bilirubin (continuous) ^b (discrete)	High	(n=1,250) $\bar{x}=0.16$ 4.6%	(n=1,022) $\bar{x}=0.16$ 3.3%	0.483 0.139	(n=1,368) $\bar{x}=0.16$ 4.2%	(n=904) $\bar{x}=0.16$ 3.9%	0.230 0.816
LDH (continuous) ^a (discrete)	High	(n=1,250) $\bar{x}=128.2$ 1.2%	(n=1,022) $\bar{x}=127.5$ 1.3%	0.434 0.999	(n=1,368) $\bar{x}=128.3$ 1.3%	(n=904) $\bar{x}=127.4$ 1.1%	0.330 0.814
Cholesterol (continuous) ^a (discrete)	High	(n=1,250) $\bar{x}=215.6$ 14.2%	(n=1,022) $\bar{x}=212.0$ 11.8%	0.030 0.104	(n=1,368) $\bar{x}=214.4$ 13.7%	(n=904) $\bar{x}=213.5$ 12.3%	0.586 0.344
HDL (continuous) (discrete)	Low	(n=1,250) $\bar{x}=46.45$ 1.3%	(n=1,022) $\bar{x}=47.56$ 0.6%	0.029 0.093	(n=1,368) $\bar{x}=46.14$ 1.3%	(n=904) $\bar{x}=48.18$ 0.4%	<0.001 0.037
Cholesterol-HDL Ratio (continuous) (discrete)	High	(n=1,250) $\bar{x}=4.99$ 44.2%	(n=1,022) $\bar{x}=4.80$ 40.7%	0.002 0.090	(n=1,368) $\bar{x}=5.00$ 44.9%	(n=904) $\bar{x}=4.76$ 39.3%	<0.001 0.008

TABLE J-1. (continued)

Dependent Variable-Covariate Associations for the Gastrointestinal Assessment

Dependent Variable	Level	Industrial Chemical Exposure			Degreasing Chemical Exposure		
		Yes	No	p-Value	Yes	No	p-Value
Triglycerides (continuous) ^a (discrete)	High	(n=1,250) $\bar{x}$ =121.0 6.3%	(n=1,022) $\bar{x}$ =114.0 5.6%	0.027 0.514	(n=1,368) $\bar{x}$ =122.7 6.2%	(n=904) $\bar{x}$ =110.7 5.6%	<0.001 0.640
Creatine Kinase (continuous) ^a (discrete)	High	(n=1,250) $\bar{x}$ =108.6 6.4%	(n=1,022) $\bar{x}$ =110.3 7.2%	0.465 0.478	(n=1,368) $\bar{x}$ =108.6 6.9%	(n=904) $\bar{x}$ =110.6 6.6%	0.410 0.898
Fasting Glucose (continuous) ^a (discrete)	High	(n=1,250) $\bar{x}$ =100.5 12.2%	(n=1,022) $\bar{x}$ =100.0 13.1%	0.503 0.576	(n=1,368) $\bar{x}$ =100.3 13.2%	(n=904) $\bar{x}$ =100.3 11.8%	0.964 0.388

^aTransformed from natural logarithm scale.^bTransformed from natural logarithm (X + 0.1) scale.

*Associations between alkaline phosphatase and alcohol variables are based on current wine use and lifetime wine history, instead of current alcohol use and lifetime alcohol history, respectively. The cutpoints for current wine use and history are given in Table 13-1.

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

TABLE J-2.

Associations Between Occurrence of Ulcer and Blood Type

Dependent Variable	Level	Blood				p-Value
		O	A	B	AB	
Reported Ulcer		(n=1,033)	(n=913)	(n=257)	(n=76)	
	Yes-Current	1.1%	1.0%	0.4%	0.0%	0.740
	Yes-Past	1.0%	0.9%	1.6%	0.0%	
	No	98.0%	98.1%	98.1%	100.0%	
Verified Ulcer (Questionnaire and Physical Exam)		(n=1,033)	(n=914)	(n=257)	(n=76)	
	Yes	5.0%	4.2%	4.3%	2.6%	0.665

TABLE J-3.

Summary of Group-by-Covariate Interactions for Hepatic Variables

Variable	Interaction	Stratification	Statistic	Group		Adj. Relative Risk (95% C.I.)	p-Value
				Ranch Hand	Comparison		
Diagnosed Hepatomegaly	Group-by- Degreasing Chemical Exposure	No	n	394	509		
			Number/%				
			Abnormal	2 0.5%	9 1.8%	0.27 (0.06,1.26)	0.095
		Yes	Normal	392 99.5%	500 98.2%		
			n	584	779		
			Number/%				
J-13 ALT	Group-by- Lifetime Alcohol History	0 Drink-Years	Abnormal	9 1.5%	6 0.8%	2.04 (0.72,5.81)	0.181
			Normal	575 98.5%	773 99.2%		
			n	97	108		
		>0-40 Drink-Years	Adj. Mean ^a	21.3	23.0	--	0.269
			95% C.I. ^a	(19.2,23.7)	(20.8,25.4)		
			n	669	874		
		>40 Drink-Years	Adj. Mean ^a	20.3	20.6	--	0.644
			95% C.I. ^a	(19.3,21.5)	(19.6,21.7)		
			n	210	301		
		>40 Drink-Years	Adj. Mean ^a	21.8	20.3	--	0.095
			95% C.I. ^a	(20.1,23.6)	(18.8,21.8)		
			n				

TABLE J-3. (continued)

Summary of Group-by-Covariate Interactions for Hepatic Variables

Variable	Interaction	Stratification	Statistic	Group		Adj. Relative Risk (95% C.I.)	p-Value
				Ranch Hand	Comparison		
Total Bilirubin	Group-by-Current Alcohol Use	0 Drinks/Day	n	97	108		
		0 Drink-Years	Number/%				
			Abnormal	3 3.1%	3 2.8%	1.12 (0.22,5.67)	0.999
			Normal	94 96.9%	105 97.2%		
	Group-by-Lifetime Alcohol History	≤1 Drinks/Day	n	587	786		
		>0-40 Drink-Years	Number/%				
			Abnormal	19 3.2%	30 3.8%	0.84 (0.47,1.51)	0.674
			Normal	568 96.8%	756 96.2%		
		≤1 Drinks/Day	n	97	120		
		>40 Drink-Years	Number/%				
			Abnormal	1 1.0%	4 3.3%	0.30 (0.03,2.75)	0.516
			Normal	96 99.0%	116 96.7%		
		>1-4 Drinks/Day	n	82	85		
		>0-40 Drink-Years	Number/%				
			Abnormal	2 2.4%	3 3.5%	0.68 (0.11,4.20)	0.999
			Normal	80 97.6%	82 96.5%		
		>1-4 Drinks/Day	n	86	139		
		>40 Drink-Years	Number/%				
			Abnormal	2 2.3%	8 5.8%	0.39 (0.08,1.88)	0.384
			Normal	84 97.7%	131 94.2%		
		>4 Drinks/Day	n	27	45		
		>40 Drink-Years*	Number/%				
			Abnormal	1 3.6%	0 0.0%	--	0.750
			Normal	26 96.4%	45 100.0%		

TABLE J-3. (continued)

Summary of Group-by-Covariate Interactions for Hepatic Variables

Variable	Interaction	Stratification	Statistic	Group		Adj. Relative Risk (95% C.I.)	p-Value
				Ranch Hand	Comparison		
Direct Bilirubin	Group-by-Race	Black	n	55	79		
			Adj. Mean ^b	0.181	0.134	--	0.026
			95% C.I. ^b	(0.148,0.218)	(0.112,0.160)		
		Nonblack	n	931	1,207		
			Adj. Mean ^b	0.155	0.158	—	0.565
			95% C.I. ^b	(0.147,0.163)	(0.151,0.165)		
Direct Bilirubin	Group-by-Degreasing Chemical Exposure	No	n	395	509		
			Number/% Abnormal	19 4.8%	16 3.1%	1.59 (0.81,3.14)	0.180
			Normal	376 95.2%	493 96.9%		
		Yes	n	591	777		
			Number/% Abnormal	16 2.7%	41 5.3%	0.48 (0.27,0.87)	0.016
			Normal	575 97.3%	736 94.7%		

TABLE J-3. (continued)

Summary of Group-by-Covariate Interactions for Hepatic Variables

Variable	Interaction	Stratification	Statistic	Group		Adj. Relative Risk (95% C.I.)	p-Value
				Ranch Hand	Comparison		
HDL	Group-by Lifetime Alcohol History	0	n	97	108	--	0.827
		Drink-Years	Adj. Mean	47.23	47.58		
			95% C.I.	(44.67, 49.78)	(45.14, 50.02)		
		>0-40	n	669	874	--	0.205
		Drink-Years	Adj. Mean	49.60	48.84		
			95% C.I.	(48.28, 50.93)	(47.60, 50.08)		
		>40	n	210	301	--	0.067
		Drink-Years	Adj. Mean	47.41	49.33		
			95% C.I.	(45.47, 49.35)	(47.56, 51.09)		

^aTransformed from natural logarithm scale.

--Adjusted relative risk not applicable for continuous analysis of a variable; adjusted relative risk/confidence interval not given due to cell with a zero frequency.

*Includes two Comparisons with 25 and 28 drink-years; all others are >40 drink-years.

^bTransformed from natural logarithm ($X + 0.1$) scale.

Note: Refer to Tables 13-5 and 13-7 for specification of adjusted model.

TABLE J-4.

Summary of Exposure Index-by-Covariate Interactions for Hepatic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index				Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High				
AST	Exposure Index-by- Current Alcohol Use (Officer)	0-1	n	99	91	95				
			Adj. Mean ^a	24.3	24.0	23.7		M vs. L	—	0.825
			95% C.I. ^a	(21.3,27.8)	(21.1,27.4)	(20.8,27.0)		H vs. L	—	0.555
		>1-4	n	24	31	25				
			Adj. Mean ^a	25.9	28.5	33.0		M vs. L	—	0.245
			95% C.I. ^a	(22.0,30.6)	(24.6,33.1)	(28.1,38.8)		H vs. L	—	0.006
		>4	n	4	0	2				
			Adj. Mean ^a	21.0	—	28.6		M vs. L	—	—
			95% C.I. ^a	(15.1,29.0)	—	(18.4,44.5)		H vs. L	—	0.240
	Exposure Index-by- Age (Enlisted Flyer)	Born >1942	n	11	17	11		Overall		0.271
			Number/%							
			Abnormal	0 0.0%	0 0.0%	1 9.1%		M vs. L	—	—
		Born 1923- 1941	Normal	11 100.0%	17 100.0%	10 90.9%		H vs. L	—	0.999
			n	43	43	42		Overall		0.366
			Number/%							
			Abnormal	1 2.3%	2 4.7%	0 0.0%		M vs. L	2.05 (0.18,23.48)	0.999
		Born <1922	Normal	42 97.7%	41 95.3%	42 100.0%		H vs. L	—	0.999
			n	0	2	0		Overall		—
			Number/%							
			Abnormal	0 —	0 0.0%	0 —		M vs. L	—	—
			Normal	0 —	2 100.0%	0 —		H vs. L	—	—

TABLE J-4. (continued)

Summary of Exposure Index-by-Covariate Interactions for Hepatic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index				Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High				
J-18 ALT	Exposure Index-by- Current Alcohol Use (Officer)	0-1	n	99	91	95				
			Adj. Mean ^a	17.3	16.8	16.4		M vs. L	—	0.674
			95% C.I. ^a	(13.9,21.4)	(13.5,20.8)	(13.3,20.3)		H vs. L	—	0.469
		>1-4	n	24	31	25				
			Adj. Mean ^a	17.0	21.3	26.9		M vs. L	—	0.100
			95% C.I. ^a	(13.1,22.2)	(16.7,27.2)	(20.7,35.0)		H vs. L	—	0.001
		>4	n	4	0	2				
			Adj. Mean ^a	14.6	—	20.9		M vs. L	—	—
			95% C.I. ^a	(8.6,24.7)	—	(10.2,42.8)		H vs. L	—	0.404
ALT	Exposure Index-by- Lifetime Alcohol History (Officer)	0	n	10	3	13		Overall		0.100
			Number/% Abnormal	4	0	1				
				40.0%	0.0%	7.7%		M vs. L	—	0.588
			Normal	6	3	12		H vs. L	0.13 (0.01,1.38)	0.177
				60.0%	100.0%	92.3%				
		>0-40	n	96	92	78		Overall		0.705
			Number/% Abnormal	9	12	8				
				9.4%	13.0%	10.3%		M vs. L	1.45 (0.58,3.62)	0.572
			Normal	87	80	70		H vs. L	1.11 (0.41,3.01)	0.999
				90.6%	87.0%	89.7%				
		>40	n	21	27	31		Overall		0.221
			Number/% Abnormal	1	5	7				
				25.0%	18.5%	22.6%		M vs. L	4.55 (0.49,42.31)	0.324
			Normal	20	22	24		H vs. L	5.83 (0.66,51.49)	0.168
				75.0%	81.5%	77.4%				

TABLE J-4. (continued)

Summary of Exposure Index-by-Covariate Interactions for Hepatic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low		Medium		High				
ALT	Exposure Index-by- Age	Born >1942	n	1		1		0		Overall		—
		0-1	Number/% Abnormal	0	0.0%	0	0.0%	0	—	M vs. L	—	—
		0	Normal	1	100.0%	1	100.0%	0	—	H vs. L	—	—
	Exposure Index-by- Current Alcohol Use	Yes										
		Born >1942	n	0		1		1		Overall		0.157
		0-1	Number/% Abnormal	0	—	0	0.0%	1	100.0%	M vs. L	—	—
	Exposure Index-by- Lifetime Alcohol History	0	Normal	0	—	1	100.0%	0	0.0%	H vs. L	—	—
		No										
		Born >1942	n	6		7		3		Overall		0.411
	Exposure Index-by- Degreasing Chemical Exposure (Enlisted Flyer)	0-1	Number/% Abnormal	1	16.7%	0	0.0%	0	0.0%	M vs. L	—	0.261
		>0-40	Normal	5	83.3%	7	100.0%	3	100.0%	H vs. L	—	0.999
		Yes										
		Born >1942	n	0		1		5		Overall		0.624
		0-1	Number/% Abnormal	0	—	0	0.0%	1	20.0%	M vs. L	—	—
		>0-40	Normal	0	—	1	100.0%	4	80.0%	H vs. L	—	—
No												
Born >1942		n	3		5		2		Overall		0.392	
	0-1	Number/% Abnormal	0	0.0%	1	20.0%	1	50.0%	M vs. L	—	0.999	
	>40	Normal	3	100.0%	4	80.0%	1	50.0%	H vs. L	—	0.800	
	Yes											

TABLE J-4. (continued)

Summary of Exposure Index by Covariate Interactions for Hepatic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index					Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low		Medium		High			
ALT (cont.)		Born >1942	n	1		1		0	Overall		0.157
		0-1	Number/%	1	100.0%	0	0.0%	0	M vs. L	—	0.157
		>40	Abnormal	0	0.0%	1	100.0%	0	H vs. L	—	—
		No	Normal								
		Born >1942	n	0		1		0	Overall		—
		>4	Number/%	0	—	0	0.0%	0	M vs. L	—	—
		>40	Abnormal	0	—	1	100.0%	0	H vs. L	—	—
		Yes	Normal								
		Born 1923- 1941	n	4		2		6	Overall		0.065
		0-1	Number/%	0	0.0%	1	50.0%	0	M vs. L	—	0.666
		0	Abnormal	4	100.0%	1	50.0%	6	H vs. L	—	—
		Yes	Normal								
		Born 1923- 1941	n	1		2		0	Overall		—
		0-1	Number/%	0	0.0%	0	0.0%	0	M vs. L	—	—
		0	Abnormal	1	100.0%	2	100.0%	0	H vs. L	—	—
		No	Normal								

TABLE J-4. (continued)

Summary of Exposure Index-by-Covariate Interactions for Hepatic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Adj. Relative Risk (95% C.I.)	p-Value	
				Low		Medium		High				Exposure Index Contrast
ALT (cont.)		Born	n	21		17		17		Overall		0.029
		1923-	Number/%									
		1941	Abnormal	0	0.0%	3	17.6%	0	0.0%	M vs. L	—	0.161
		0-1	Normal	21	100.0%	14	82.4%	17	100.0%	H vs. L	—	—
		>0-40										
		Yes										
		Born	n	4		6		4		Overall		—
		1923-	Number/%									
		1941	Abnormal	0	0.0%	0	0.0%	0	0.0%	M vs. L	—	—
		0-1	Normal	4	100.0%	6	100.0%	4	100.0%	H vs. L	—	—
		>0-40										
		No										
		Born	n	3		5		4		Overall		0.336
		1923-	Number/%									
		1941	Abnormal	0	0.0%	0	0.0%	1	25.0%	M vs. L	—	—
		0-1	Normal	3	100.0%	5	100.0%	3	75.0%	H vs. L	—	0.999
		>40										
		Yes										
		Born	n	3		1		0		Overall		—
		1923-	Number/%									
		1941	Abnormal	0	0.0%	0	0.0%	0	—	M vs. L	—	—
		0-1	Normal	3	100.0%	1	100.0%	0	—	H vs. L	—	—
		>40										
		No										

TABLE J-4. (continued)

Summary of Exposure Index-by-Covariate Interactions for Hepatic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
ALT (cont.)		Born	n	1	0	6	Overall		—
		1923-	Number/%						
		1941	Abnormal	0 0.0%	0 —	0 0.0%	M vs. L	—	—
		>1-4	Normal	1 100.0%	0 —	6 100.0%	H vs. L	—	—
		>0-40							
		Yes							
		Born	n	2	2	0	Overall		—
		1923-	Number/%						
		1941	Abnormal	0 0.0%	0 0.0%	0 —	M vs. L	—	—
		>1-4	Normal	2 100.0%	2 100.0%	0 —	H vs. L	—	—
		>0-40							
		No							
		Born	n	2	6	1	Overall		0.223
		1923-	Number/%						
		1941	Abnormal	1 50.0%	1 16.7%	1 100.0%	M vs. L	0.20 (0.006,6.66)	0.928
		>1-4	Normal	1 50.0%	5 83.3%	0 0.0%	H vs. L	—	0.999
		>0-40							
		Yes							
		Born	n	0	0	1	Overall		—
		1923-	Number/%						
		1941	Abnormal	0 —	0 —	0 0.0%	M vs. L	—	—
		>1-4	Normal	0 —	0 —	1 100.0%	H vs. L	—	—
		>0-40							
		No							

TABLE J-4. (continued)

Summary of Exposure Index-by-Covariate Interactions for Hepatic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
ALT (cont.)		Born	n	2	2	2	Overall		0.301
		1923-	Number/%						
		1941	Abnormal	1 50.0%	0 0.0%	0 0.0%	M vs. L	—	0.999
		>4	Normal	1 50.0%	2 100.0%	2 100.0%	H vs. L	—	0.999
		>40							
		Yes							
		Born	n	0	0	1	Overall		—
		1923-	Number/%						
		1941	Abnormal	0 —	0 —	0 0.0%	M vs. L	—	—
		>4	Normal	0 —	0 —	1 100.0%	H vs. L	—	—
		>40							
		No							
		Born	n	0	1	0	Overall		—
		<1922	Number/%						
		0-1	Abnormal	0 —	0 0.0%	0 —	M vs. L	—	—
		>0-40	Normal	0 —	1 100.0%	0 —	H vs. L	—	—
		Yes							
		Born	n	0	1	0	Overall		—
		<1922	Number/%						
		1-4	Abnormal	0 —	0 0.0%	0 —	M vs. L	—	—
		>40	Normal	0 —	1 100.0%	0 —	H vs. L	—	—
		Yes							

TABLE J-4. (continued)

Summary of Exposure Index-by-Covariate Interactions for Hepatic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
GGT	Exposure Index-by- Degreasing Chemical Exposure (Officer)	Yes	n	38	36	50			
			Adj. Mean ^a	38.7	31.0	33.8	M vs. L	—	0.147
			95% C.I. ^a	(27.9,53.7)	(22.3,43.0)	(24.9,46.0)	H vs. L	—	0.341
		No	n	89	86	72			
			Adj. Mean ^a	24.5	27.8	32.6	M vs. L	—	0.214
			95% C.I. ^a	(18.5,32.5)	(21.1,36.6)	(24.5,43.4)	H vs. L	—	0.007

TABLE J-4. (continued)

Summary of Exposure Index-by-Covariate Interactions for Hepatic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low		Medium		High				
GGT	Exposure Index-by- Lifetime Alcohol History	0 Drink-Years 0-1 Drinks/ Day	n	6		6		7		Overall		0.991
			Number/%	1	16.7%	1	16.7%	1	14.3%	M vs. L	1.00 (0.05,20.83)	0.999
			Abnormal Normal	5	83.3%	5	83.3%	6	85.7%	H vs. L	0.83 (0.04,16.99)	0.999
		>0-40 Drink-Years 0-1 Drinks/ Day	n	31		32		29		Overall		0.132
			Number/%	1	3.2%	0	0.0%	3	10.3%	M vs. L	—	0.984
			Abnormal Normal	30	96.8%	32	100.0%	26	89.7%	H vs. L	3.46 (0.34,35.34)	0.562
	Exposure Index-by- Current Alcohol Use (Enlisted Flyer)	>40 Drink-Years 0-1 Drinks/ Day	n	10		12		6		Overall		0.149
			Number/%	0	0.0%	0	0.0%	1	16.7%	M vs. L	—	—
			Abnormal Normal	10	100.0%	12	100.0%	5	83.3%	H vs. L	—	0.750
		>0-40 Drink-Years >1-4 Drinks/ Day	n	3		2		6		Overall		0.206
			Number/%	1	33.3%	1	50.0%	0	0.0%	M vs. L	2.00 (0.05,78.25)	0.999
			Abnormal Normal	2	66.7%	1	50.0%	6	100.0%	H vs. L	—	0.666
	>40 Drink-Years >1-4 Drinks/ Day	n	2		7		2		Overall		0.441	
		Number/%	1	50.0%	1	14.3%	1	50.0%	M vs. L	0.17 (0.005,5.45)	0.834	
		Abnormal Normal	1	50.0%	6	85.7%	1	50.0%	H vs. L	1.00 (0.02,50.40)	0.999	
		>40 Drink-Years >4 Drinks/ Day	n	2		3		3		Overall		0.076
			Number/%	2	100.0%	1	33.3%	0	0.0%	M vs. L	—	0.600
			Abnormal Normal	0	0.0%	2	66.7%	3	100.0%	H vs. L	—	0.200

TABLE J-4. (continued)

Summary of Exposure Index-by-Covariate Interactions for Hepatic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
Alkaline Phosphatase	Exposure Index-by- Lifetime Wine History (Officer)	0	n	35	34	35			
			Adj. Mean ^a	83.4	85.5	79.4	M vs. L	—	0.659
			95% C.I. ^a	(73.8,94.2)	(75.9,96.4)	(70.6,89.3)	H vs. L	—	0.398
		>0-10	n	83	80	76			
			Adj. Mean ^a	78.2	77.2	83.3	M vs. L	—	0.729
			95% C.I. ^a	(70.5,86.8)	(69.7,85.6)	(75.0,92.5)	H vs. L	—	0.108
Alkaline Phosphatase	Exposure Index-by- Degreasing Chemical Exposure (Enlisted Groundcrew)	>10	n	9	8	11			
			Adj. Mean ^a	61.3	73.3	79.9	M vs. L	—	0.133
			95% C.I. ^a	(50.2,74.9)	(58.4,91.9)	(67.2,95.0)	H vs. L	—	0.017
		Yes	n	105	114	110			
			Adj. Mean ^a	93.5	100.1	96.2	M vs. L	—	0.028
			95% C.I. ^a	(88.5,98.8)	(95.0,105.6)	(91.2,101.4)	H vs. L	—	0.377
Alkaline Phosphatase	Exposure Index-by- Degreasing Chemical Exposure (Enlisted Groundcrew)	No	n	39	41	28			
			Adj. Mean ^a	97.1	93.0	104.2	M vs. L	—	0.399
			95% C.I. ^a	(90.0,104.8)	(86.0,100.6)	(95.1,114.1)	H vs. L	—	0.217

TABLE J-4. (continued)

Summary of Exposure Index-by-Covariate Interactions for Hepatic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value	
				Low		Medium		High					
Alkaline Phosphatase	Exposure Index-by- Lifetime Wine History (Enlisted Groundcrew)	0	n	90		112		101		Overall			0.278
			Number/%										
			Abnormal	3	3.3%	10	8.9%	7	6.9%	M vs. L	2.84 (0.76,10.67)	0.180	
				Normal	87	96.7%	102	91.1%	94	93.1%	H vs. L	2.16 (0.54,8.62)	0.434
		>0-10	n	49		39		35		Overall			0.067
			Number/%										
			Abnormal	6	12.2%	0	0.0%	2	5.7%	M vs. L	—	0.052	
				Normal	43	87.8%	39	100.0%	33	94.3%	H vs. L	0.43 (0.08,2.29)	0.540
		>10	n	5		4		2		Overall			—
			Number/%										
			Abnormal	0	0.0%	0	0.0%	0	0.0%	M vs. L	—	—	
				Normal	5	100.0%	4	100.0%	2	100.0%	H vs. L	—	—

TABLE J-4. (continued)

Summary of Exposure Index-by-Covariate Interactions for Hepatic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value		
				Low		Medium		High						
Total Bilirubin	Exposure Index-by- Age	Born >1942 Yes	n	16		6		2		Overall		—		
			Number/%											
			Abnormal	0	0.0%	0	0.0%	0	0.0%	M vs. L	—	—		
				Normal	16	100.0%	6	100.0%	2	100.0%	H vs. L	—	—	
	Exposure Index-by- Industrial Chemical Exposure (Officer)	Born >1942 No	n	30		14		9		Overall		0.296		
			Number/%											
			Abnormal	3	10.0%	0	0.0%	0	0.0%	M vs. L	—	0.614		
					Normal	27	90.0%	14	100.0%	9	100.0%	H vs. L	—	0.888
		Born 1923- 1941 Yes	n	26		29		42		Overall		0.478		
			Number/%											
			Abnormal	1	3.8%	2	6.9%	5	11.9%	M vs. L	1.85 (0.16,21.70)	0.999		
					Normal	25	96.2%	27	93.1%	37	88.1%	H vs. L	3.38 (0.37,30.68)	0.500
		Born 1923- 1941 No	n	50		59		66		Overall		0.284		
			Number/%											
			Abnormal	1	2.0%	0	0.0%	0	0.0%	M vs. L	—	0.918		
					Normal	49	98.0%	59	100.0%	66	100.0%	H vs. L	—	0.862
Born <1922 Yes		n	1		6		0		Overall		—			
	Number/%													
	Abnormal	0	0.0%	0	0.0%	0	—	M vs. L	—	—				
			Normal	1	100.0%	6	100.0%	0	—	H vs. L	—	—		
Born <1922 No	n	4		8		3		Overall		0.626				
	Number/%													
	Abnormal	0	0.0%	1	12.5%	0	0.0%	M vs. L	—	0.999				
			Normal	4	100.0%	7	87.5%	3	100.0%	H vs. L	—	—		

TABLE J-4. (continued)

Summary of Exposure Index-by-Covariate Interactions for Hepatic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
Total Bilirubin	Exposure Index-by- Age	Born >1942	n	9	10	4	Overall		0.241
		Yes (IC)	Number/% Abnormal	0 0.0%	2 20.0%	0 0.0%	M vs. L	—	0.156
		Yes (DC)	Normal	9 100.0%	8 80.0%	4 100.0%	H vs. L	—	—
	Exposure Index-by- Industrial Chemical Exposure	Born >1942	n	1	2	4	Overall		0.030
		Yes (IC)	Number/% Abnormal	1 100.0%	0 0.0%	0 0.0%	M vs. L	—	0.666
		No (DC)	Normal	0 0.0%	2 100.0%	4 100.0%	H vs. L	—	0.400
	Exposure Index-by- Degreasing Chemical Exposure (Enlisted Flyer)	Born >1942	n	1	4	1	Overall		—
		No (IC)	Number/% Abnormal	0 0.0%	0 0.0%	0 0.0%	M vs. L	—	—
		Yes (DC)	Normal	1 100.0%	4 100.0%	1 100.0%	H vs. L	—	—
		Born >1942	n	0	1	2	Overall		0.511
		No (IC)	Number/% Abnormal	0 —	0 0.0%	0 0.0%	M vs. L	—	—
		No (DC)	Normal	0 —	1 100.0%	2 100.0%	H vs. L	—	—
		Born 1923- 1941	n	24	23	23	Overall		0.355
		Yes (IC)	Number/% Abnormal	0 0.0%	1 4.3%	0 0.0%	M vs. L	—	0.302
		Yes (DC)	Normal	24 100.0%	22 95.7%	23 100.0%	H vs. L	—	—
		Born 1923- 1941	n	5	2	4	Overall		—
		Yes (IC)	Number/% Abnormal	0 0.0%	0 0.0%	0 0.0%	M vs. L	—	—
		No (DC)	Normal	5 100.0%	2 100.0%	4 100.0%	H vs. L	—	—

TABLE J-4. (continued)

Summary of Exposure Index-by-Covariate Interactions for Hepatic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index				Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High				
Total Bilirubin (cont.)		Born	n	9	9	13		Overall		0.489
		1923-	Number/%							
		1941	Abnormal	0	0.0%	0	0.0%	1	7.7%	M vs. L
		No (IC)	Normal	9	100.0%	9	100.0%	12	92.3%	H vs. L
		Yes (DC)								0.999
		Born	n	5	9	2		Overall		—
		1923-	Number/%							
		1941	Abnormal	0	0.0%	0	0.0%	0	0.0%	M vs. L
		No (IC)	Normal	5	100.0%	9	100.0%	2	100.0%	H vs. L
		No (DC)								—
		Born	n	0	2	0		Overall		—
		<1922	Number/%							
		No (IC)	Abnormal	0	—	0	0.0%	0	—	M vs. L
		Yes (DC)	Normal	0	—	2	100.0%	0	—	H vs. L

TABLE J-4. (continued)

Summary of Exposure Index-by-Covariate Interactions for Hepatic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
Total Bilirubin	Exposure Index-by- Age	Born >1942	n	66	99	64			
		0-1	Adj. Mean ^b 95% C.I. ^b	0.817 (0.752,0.887)	0.757 (0.699,0.818)	0.789 (0.723,0.861)	M vs. L H vs. L	— —	0.108 0.507
	Exposure Index-by- Current Alcohol Use	Born >1942	n	14	19	13			
		>1-4	Adj. Mean ^b 95% C.I. ^b	0.783 (0.666,0.919)	0.833 (0.723,0.958)	0.840 (0.710,0.989)	M vs. L H vs. L	— —	0.557 0.544
	(Enlisted Groundcrew)	Born >1942	n	2	2	2			
		>4	Adj. Mean ^b 95% C.I. ^b	0.775 (0.502,1.171)	1.495 (0.996,2.222)	1.028 (0.678,1.535)	M vs. L H vs. L	— —	0.026 0.338
		Born 1923- 1941	n	47	28	44			
		0-1	Adj. Mean ^b 95% C.I. ^b	0.681 (0.616,0.752)	0.807 (0.718,0.905)	0.787 (0.712,0.869)	M vs. L H vs. L	— —	0.019 0.023
		Born 1923- 1941	n	6	5	7			
		>1-4	Adj. Mean ^b 95% C.I. ^b	0.916 (0.717,1.163)	0.816 (0.623,1.061)	0.865 (0.687,1.083)	M vs. L H vs. L	— —	0.520 0.725
		Born 1923- 1941	n	4	1	2			
		>4	Adj. Mean ^b 95% C.I. ^b	0.766 (0.562,1.031)	0.821 (0.447,1.450)	0.645 (0.412,0.984)	M vs. L H vs. L	— —	0.835 0.517

TABLE J-4. (continued)

Summary of Exposure Index-by-Covariate Interactions for Hepatic Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index			Exposure Index Contrast	Adj. Relative Risk (95% C.I.)	p-Value
				Low	Medium	High			
Total Bilirubin (cont.)		Born	n	4	0	5			
		<1922	Adj. Mean ^b	0.740	—	0.907	M vs. L	—	—
		0-1	95% C.I. ^b	(0.541,1.000)	—	(0.693,1.180)	H vs. L	—	0.306
		Born	n	0	1	1			
		<1922	Adj. Mean ^b	—	0.812	1.217	M vs. L	—	—
		51-4	95% C.I. ^b	—	(0.442,1.435)	(0.683,2.116)	H vs. L	—	—
Direct Bilirubin	Exposure Index-by- Current Alcohol Use (Enlisted Groundcrew)	0-1	n	117	127	113			
			Adj. Mean ^b	0.169	0.182	0.194	M vs. L	—	0.382
			95% C.I. ^b	(0.143,0.196)	(0.155,0.211)	(0.166,0.226)	H vs. L	—	0.106
		>1-4	n	20	25	21			
			Adj. Mean ^b	0.159	0.206	0.224	M vs. L	—	0.191
			95% C.I. ^b	(0.113,0.216)	(0.156,0.267)	(0.167,0.294)	H vs. L	—	0.095
		≥4	n	6	3	4			
			Adj. Mean ^b	0.124	0.330	0.159	M vs. L	—	0.031
			95% C.I. ^b	(0.057,0.220)	(0.163,0.602)	(0.069,0.299)	H vs. L	—	0.597