

APPENDIX I

Neurological Assessment

APPENDIX I: Neurological Assessment

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TABLE I-1.
Unadjusted Exposure Index Analyses for Neurological Variables by Occupation

Variable	Occupation	Statistic	Exposure Index						Contrast	Est. Relative Risk (95% C.I.)	p-Value			
			Low		Medium		High							
			Number	Percent	Number	Percent	Number	Percent						
Smell	Officer	n	127		130		123		Overall		0.361			
		Abnormal	2	1.6	0	0.0	1	0.8	M vs. L	0.19 (0.01,4.05)*	0.243			
		Normal	125	98.4	130	100.0	122	99.2	H vs. L	0.51 (0.05,5.72)	0.999			
	Enlisted	n	55		65		57		Overall		0.739			
		Abnormal	1	1.8	1	1.5	2	3.5	M vs. L	0.84 (0.05,13.81)	0.999			
	Flyer	Normal	54	98.2	64	98.5	55	96.5	H vs. L	1.96 (0.17,22.30)	0.999			
Visual Fields	Enlisted	n	154		163		142		Overall		0.995			
		Abnormal	1	0.7	1	0.6	1	0.7	M vs. L	0.94 (0.06,15.23)	0.999			
		Normal	153	99.3	162	99.4	141	99.3	H vs. L	1.09 (0.07,17.51)	0.999			
	Officer	n	127		130		123		Overall		0.593			
		Abnormal	1	0.8	0	0.0	1	0.8	M vs. L	0.32 (0.01,8.01)*	0.494			
	Normal	126	99.2		130	100.0	122	99.2	H vs. L	1.03 (0.06,16.70)	0.999			
Hearing	Enlisted	n	55		65		57		Overall		0.328			
		Abnormal	1	1.8	0	0.0	0	0.0	M vs. L	0.28 (0.01,6.95)*	0.458			
		Normal	54	98.2	65	100.0	57	100.0	H vs. L	0.32 (0.01,7.92)*	0.491			
	Flyer	n	154		163		142		Overall		0.356			
		Abnormal	2	1.3	0	0.0	1	0.7	M vs. L	0.19 (0.01,3.92)*	0.235			
	Groundcrew	Normal	152	98.7	163	100.0	141	99.3	H vs. L	0.54 (0.05,6.01)	0.999			

TABLE I-1. (continued)

Unadjusted Exposure Index Analyses for Neurological Variables by Occupation

Variable	Occupation	Statistic	Exposure Index						Contrast	Est. Relative Risk (95% C.I.)	p-Value			
			Low		Medium		High							
			Number	Percent	Number	Percent	Number	Percent						
Light Reaction	Officer	n	126		130		123		Overall		0.133			
		Abnormal	2	1.6	0	0.0	0	0.0	M vs. L	0.19 (0.01,4.01)*	0.241			
		Normal	124	98.4	130	100.0	123	100.0	H vs. L	0.20 (0.01,4.24)*	0.498			
	Enlisted Flyer	n	55		65		57		Overall		0.328			
		Abnormal	1	1.8	0	0.0	0	0.0	M vs. L	0.28 (0.01,6.95)*	0.458			
		Normal	54	98.2	65	100.0	57	100.0	H vs. L	0.32 (0.01,7.92)*	0.491			
	Enlisted Groundcrew	n	154		163		142		Overall		0.866			
		Abnormal	2	1.3	2	1.2	1	0.7	M vs. L	0.94 (0.13,6.79)	0.999			
		Normal	152	98.7	161	98.8	141	99.3	H vs. L	0.54 (0.05,6.01)	0.999			
Ocular Movements	Officer	n	127		130		123		Overall		0.368			
		Abnormal	1	0.8	0	0.0	0	0.0	M vs. L	0.32 (0.01,8.01)*	0.494			
		Normal	126	99.2	130	100.0	123	100.0	H vs. L	0.34 (0.01,8.46)*	0.999			
	Enlisted Flyer	n	55		65		57		Overall		0.612			
		Abnormal	1	1.8	1	1.5	0	0.0	M vs. L	0.84 (0.05,13.81)	0.999			
		Normal	54	98.2	64	98.5	57	100.0	H vs. L	0.32 (0.01,7.92)*	0.491			
	Enlisted Groundcrew	n	154		163		142		Overall		0.995			
		Abnormal	1	0.7	1	0.6	1	0.7	M vs. L	0.94 (0.06,15.23)	0.999			
		Normal	153	99.3	162	99.4	141	99.3	H vs. L	1.09 (0.07,17.51)	0.999			

TABLE I-1. (continued)

Unadjusted Exposure Index Analyses for Neurological Variables by Occupation

Variable	Occupation	Statistic	Exposure Index						Contrast	Est. Relative Risk (95% C.I.)	p-Value			
			Low		Medium		High							
			Number	Percent	Number	Percent	Number	Percent						
Facial Sensation	Officer	n	126		130		123		Overall		0.617			
		Abnormal	1	0.8	1	0.8	0	0.0	M vs. L	0.97 (0.06,15.66)	0.999			
		Normal	125	99.2	129	99.2	123	100.0	H vs. L	0.34 (0.01,8.40)*	0.999			
	Enlisted Flyer	n	55		65		57		Overall		0.328			
		Abnormal	1	1.8	0	0.0	0	0.0	M vs. L	0.28 (0.01,6.95)*	0.458			
		Normal	54	98.2	65	100.0	57	100.0	H vs. L	0.32 (0.01,7.92)*	0.491			
	Enlisted Groundcrew	n	154		163		141		Overall		0.372			
		Abnormal	1	0.7	0	0.0	0	0.0	M vs. L	0.31 (0.01,7.74)*	0.486			
		Normal	153	99.3	163	100.0	141	100.0	H vs. L	0.36 (0.02,8.95)*	0.999			
Corneal Reflex	Officer	n	125		130		123		Overall		—			
		Abnormal	0	0.0	0	0.0	0	0.0	M vs. L	—	—			
		Normal	125	100.0	130	100.0	123	100.0	H vs. L	—	—			
	Enlisted Flyer	n	55		65		57		Overall		—			
		Abnormal	0	0.0	0	0.0	0	0.0	M vs. L	—	—			
		Normal	55	100.0	65	100.0	57	100.0	H vs. L	—	—			
	Enlisted Groundcrew	n	152		161		142		Overall		—			
		Abnormal	0	0.0	0	0.0	0	0.0	M vs. L	—	—			
		Normal	152	100.0	161	100.0	142	100.0	H vs. L	—	—			

TABLE I-1. (continued)
Unadjusted Exposure Index Analyses for Neurological Variables by Occupation

Variable	Occupation	Statistic	Exposure Index						Contrast	Est. Relative Risk (95% C.I.)	p-Value
			Low		Medium		High				
			Number	Percent	Number	Percent	Number	Percent			
Jaw Clench	Officer	n	127		130		123		Overall		
		Abnormal	1	0.8	0	0.0	0	0.0	M vs. L	0.32 (0.01,8.01)*	0.368
		Normal	126	99.2	130	100.0	123	100.0	H vs. L	0.34 (0.01,8.46)*	0.494
	Enlisted Flyer	n	55		65		57		Overall		
		Abnormal	1	1.8	0	0.0	0	0.0	M vs. L	0.28 (0.01,6.95)*	0.328
		Normal	54	98.2	65	100.0	57	100.0	H vs. L	0.32 (0.01,7.92)*	0.458
	Enlisted Groundcrew	n	154		163		142		Overall		
		Abnormal	0	0.0	0	0.0	0	0.0	M vs. L	—	—
		Normal	154	100.0	163	100.0	142	100.0	H vs. L	—	—
Smile	Officer	n	127		130		123		Overall		
		Abnormal	1	0.8	1	0.8	0	0.0	M vs. L	0.98 (0.06,15.79)	0.618
		Normal	126	99.2	129	99.2	123	100.0	H vs. L	0.34 (0.01,8.46)*	0.999
	Enlisted Flyer	n	55		65		57		Overall		
		Abnormal	1	1.8	1	1.5	0	0.0	M vs. L	0.84 (0.05,13.81)	0.612
		Normal	54	98.2	64	98.5	57	100.0	H vs. L	0.32 (0.01,7.92)*	0.999
	Enlisted Groundcrew	n	154		163		142		Overall		
		Abnormal	0	0.0	1	0.6	2	1.4	M vs. L	2.85 (0.12,70.55)*	0.323
		Normal	154	100.0	162	99.4	140	98.6	H vs. L	5.50 (0.26,115.5)*	0.999

TABLE I-1. (continued)
Unadjusted Exposure Index Analyses for Neurological Variables by Occupation

Variable	Occupation	Statistic	Exposure Index						Contrast	Est. Relative Risk (95% C.I.)	p-Value			
			Low		Medium		High							
			Number	Percent	Number	Percent	Number	Percent						
Palpebral Fissures	Officer	n	127		130		122		Overall		0.801			
		Abnormal	1	0.8	2	1.5	1	0.8	M vs. L	1.97 (0.18,21.99)	0.999			
		Normal	126	99.2	128	98.5	121	99.2	H vs. L	1.04 (0.06,16.84)	0.999			
	Enlisted Flyer	n	55		65		57		Overall		0.420			
		Abnormal	0	0.0	1	1.5	0	0.0	M vs. L	2.58 (0.10,64.65)*	0.999			
		Normal	55	100.0	64	98.5	57	100.0	H vs. L	—	—			
Balance	Enlisted Groundcrew	n	154		163		142		Overall		0.598			
		Abnormal	0	0.0	1	0.6	1	0.7	M vs. L	2.85 (0.12,70.55)*	0.999			
		Normal	154	100.0	162	99.4	141	99.3	H vs. L	3.28 (0.13,81.06)*	0.480			
	Officer	n	127		130		123		Overall		—			
		Abnormal	0	0.0	0	0.0	0	0.0	M vs. L	—	—			
		Normal	127	100.0	130	100.0	123	100.0	H vs. L	—	—			
	Enlisted Flyer	n	55		64		57		Overall		—			
		Abnormal	0	0.0	0	0.0	0	0.0	M vs. L	—	—			
		Normal	55	100.0	64	100.0	57	100.0	H vs. L	—	—			
Enlisted Groundcrew	Enlisted Groundcrew	n	154		163		142		Overall		0.574			
		Abnormal	1	0.7	0	0.0	1	0.7	M vs. L	0.31 (0.01,7.74)*	0.486			
		Normal	153	99.3	163	100.0	141	99.3	H vs. L	1.09 (0.07,17.51)*	0.999			

TABLE I-1. (continued)

Unadjusted Exposure Index Analyses for Neurological Variables by Occupation

Variable	Occupation	Statistic	Exposure Index						Contrast	Est. Relative Risk (95% C.I.)	p-Value			
			Low		Medium		High							
			Number	Percent	Number	Percent	Number	Percent						
Gag Reflex	Officer	n	126		130		123		Overall					
		Abnormal	0	0.0	0	0.0	0	0.0	M vs. L					
		Normal	126	100.0	130	100.0	123	100.0	H vs. L					
	Enlisted Flyer	n	55		65		57		Overall					
		Abnormal	1	1.8	0	0.0	0	0.0	M vs. L	0.28 (0.01,6.95)*	0.328			
		Normal	54	98.2	65	100.0	57	100.0	H vs. L	0.32 (0.01,7.92)*	0.458			
	Enlisted Groundcrew	n	153		163		142		Overall					
		Abnormal	0	0.0	0	0.0	0	0.0	M vs. L					
		Normal	153	100.0	163	100.0	142	100.0	H vs. L					
Speech	Officer	n	127		130		123		Overall					
		Abnormal	0	0.0	0	0.0	0	0.0	M vs. L					
		Normal	127	100.0	130	100.0	123	100.0	H vs. L					
	Enlisted Flyer	n	55		65		57		Overall					
		Abnormal	1	1.8	0	0.0	0	0.0	M vs. L	0.28 (0.01,6.95)*	0.328			
		Normal	54	98.2	65	100.0	57	100.0	H vs. L	0.32 (0.01,7.92)*	0.458			
	Enlisted Groundcrew	n	154		163		142		Overall					
		Abnormal	1	0.7	0	0.0	1	0.7	M vs. L	0.31 (0.01,7.74)*	0.574			
		Normal	153	99.3	163	100.0	141	99.3	H vs. L	1.09 (0.07,17.51)	0.486			

TABLE I-1. (continued)

Unadjusted Exposure Index Analyses for Neurological Variables by Occupation

Variable	Occupation	Statistic	Exposure Index						Contrast	Est. Relative Risk (95% C.I.)	p-Value
			Low		Medium		High				
			Number	Percent	Number	Percent	Number	Percent			
Tongue Position Relative to Midline	Officer	n	127		130		123		Overall		0.368
		Abnormal	1	0.8	0	0.0	0	0.0	M vs. L	0.32 (0.01,8.01)*	0.494
		Normal	126	99.2	130	100.0	123	100.0	H vs. L	0.34 (0.01,8.46)*	0.999
	Enlisted Flyer	n	55		65		57		Overall		0.328
		Abnormal	1	1.8	0	0.0	0	0.0	M vs. L	0.28 (0.01,6.95)*	0.458
		Normal	54	98.2	65	100.0	57	100.0	H vs. L	0.32 (0.01,7.92)*	0.491
	Enlisted Groundcrew	n	153		163		142		Overall		0.404
		Abnormal	0	0.0	1	0.6	0	0.0	M vs. L	2.83 (0.12,70.09)*	0.999
		Normal	153	100.0	162	99.4	142	100.0	H vs. L	—	—
Palate and Uvula Movement	Officer	n	126		130		123		Overall		0.365
		Abnormal	1	0.8	0	0.0	0	0.0	M vs. L	0.32 (0.01,7.94)*	0.492
		Normal	125	99.2	130	100.0	123	100.0	H vs. L	0.34 (0.01,8.40)*	0.999
	Enlisted Flyer	n	55		65		57		Overall		0.328
		Abnormal	1	1.8	0	0.0	0	0.0	M vs. L	0.28 (0.01,6.95)*	0.458
		Normal	54	98.2	65	100.0	57	100.0	H vs. L	0.32 (0.01,7.92)*	0.491
	Enlisted Groundcrew	n	153		163		142		Overall		—
		Abnormal	0	0.0	0	0.0	0	0.0	M vs. L	—	—
		Normal	153	100.0	163	100.0	142	100.0	H vs. L	—	—

TABLE I-1. (continued)

Unadjusted Exposure Index Analyses for Neurological Variables by Occupation

Variable	Occupation	Statistic	Exposure Index						Contrast	Est. Relative Risk (95% C.I.)	p-Value			
			Low		Medium		High							
			Number	Percent	Number	Percent	Number	Percent						
Neck Range of Motion	Officer	n	127		130		123		Overall		0.924			
		Abnormal	9	7.1	9	6.9	10	8.1	M vs. L	0.98 (0.37,2.54)	0.999			
		Normal	118	92.9	121	93.1	113	91.9	H vs. L	1.16 (0.46,2.96)	0.814			
	Enlisted Flyer	n	55		65		57		Overall		0.891			
		Abnormal	5	9.1	6	9.2	4	7.0	M vs. L	1.02 (0.29,3.53)	0.999			
		Normal	50	90.9	59	90.8	53	93.0	H vs. L	0.76 (0.19,2.97)	0.740			
	Enlisted Groundcrew	n	154		163		142		Overall		0.250			
		Abnormal	9	5.8	6	3.7	3	2.1	M vs. L	0.62 (0.21,1.77)	0.433			
		Normal	145	94.2	157	96.3	139	97.9	H vs. L	0.35 (0.09,1.31)	0.142			
Cranial Nerve Function Index	Officer	n	122		130		123		Overall		0.734			
		Abnormal	15	12.3	12	9.2	13	10.7	M vs. L	0.73 (0.33,1.62)	0.542			
		Normal	107	87.7	118	90.8	109	89.3	H vs. L	0.85 (0.39,1.87)	0.841			
	Enlisted Flyer	n	55		64		57		Overall		0.754			
		Abnormal	7	12.7	8	12.5	5	8.8	M vs. L	0.98 (0.33,2.90)	0.999			
		Normal	48	87.3	56	87.5	52	91.2	H vs. L	0.66 (0.20,2.22)	0.554			
	Enlisted Groundcrew	n	151		161		141		Overall		0.512			
		Abnormal	15	9.9	12	7.5	9	6.4	M vs. L	0.73 (0.33,1.62)	0.546			
		Normal	136	90.1	149	92.5	132	93.6	H vs. L	0.62 (0.26,1.46)	0.290			

TABLE I-1. (continued)

Unadjusted Exposure Index Analyses for Neurological Variables by Occupation

Variable	Occupation	Statistic	Exposure Index						Est. Relative Risk (95% C.I.)	p-Value		
			Low		Medium		High					
			Number	Percent	Number	Percent	Number	Percent				
Cranial Nerve Function Index (Neck Range of Motion Excluded)	Officer	n	122		130		122		Overall	0.136		
		Abnormal	8	6.6	3	2.3	3	2.5	M vs. L	0.34 (0.09,1.30)		
		Normal	114	93.4	127	97.7	119	97.5	H vs. L	0.36 (0.09,1.39)		
	Enlisted Flyer	n	55		64		57		Overall	0.791		
		Abnormal	3	5.5	2	3.1	2	3.5	M vs. L	0.56 (0.09,3.47)		
		Normal	52	94.5	62	96.9	55	96.5	H vs. L	0.63 (0.10,3.93)		
Pin Prick	Enlisted Groundcrew	n	151		161		141		Overall	0.785		
		Abnormal	8	5.3	6	3.7	7	5.0	M vs. L	0.69 (0.23,2.04)		
		Normal	143	94.7	155	96.3	134	95.0	H vs. L	0.93 (0.33,2.65)		
	Officer	n	126		127		122		Overall	0.713		
		Abnormal	9	7.1	6	4.7	7	5.7	M vs. L	0.65 (0.22,1.87)		
		Normal	117	92.9	121	95.3	115	94.3	H vs. L	0.79 (0.29,2.20)		
	Enlisted Flyer	n	55		64		57		Overall	0.584		
		Abnormal	5	9.1	3	4.7	5	8.8	M vs. L	0.49 (0.11,2.16)		
		Normal	50	90.9	61	95.3	52	91.2	H vs. L	0.96 (0.26,3.52)		
	Enlisted Groundcrew	n	152		162		138		Overall	0.052		
		Abnormal	13	8.6	8	4.9	3	2.2	M vs. L	0.56 (0.22,1.38)		
		Normal	139	91.4	154	95.1	135	97.8	H vs. L	0.24 (0.07,0.85)		

TABLE I-1. (continued)

Unadjusted Exposure Index Analyses for Neurological Variables by Occupation

Variable	Occupation	Statistic	Exposure Index						Contrast	Est. Relative Risk (95% C.I.)	p-Value			
			Low		Medium		High							
			Number	Percent	Number	Percent	Number	Percent						
Light Touch	Officer	n	126		127		122		Overall		0.141			
		Abnormal	9	7.1	4	3.2	3	2.5	M vs. L	0.42 (0.13,1.41)	0.167			
		Normal	117	92.9	123	96.8	119	97.5	H vs. L	0.33 (0.09,1.24)	0.137			
	Enlisted Flyer	n	55		64		57		Overall		0.619			
		Abnormal	3	5.5	2	3.1	4	7.0	M vs. L	0.56 (0.09,3.47)	0.661			
		Normal	52	94.5	62	96.9	53	93.0	H vs. L	1.31 (0.28,6.13)	0.999			
	Enlisted Groundcrew	n	152		162		138		Overall		0.834			
		Abnormal	5	3.3	5	3.1	3	2.2	M vs. L	0.94 (0.27,3.30)	0.999			
		Normal	147	96.7	157	96.9	135	97.8	H vs. L	0.65 (0.15,2.79)	0.725			
Muscle Status	Officer	n	127		130		123		Overall		0.428			
		Abnormal	5	3.9	2	1.5	5	4.1	M vs. L	0.38 (0.07,2.00)	0.278			
		Normal	122	96.1	128	98.5	118	95.9	H vs. L	1.03 (0.29,3.66)	0.999			
	Enlisted Flyer	n	55		65		57		Overall		0.992			
		Abnormal	1	1.8	1	1.5	1	1.8	M vs. L	0.84 (0.05,13.81)	0.999			
		Normal	54	98.2	64	98.5	56	98.2	H vs. L	0.96 (0.06,15.81)	0.999			
	Enlisted Groundcrew	n	154		163		142		Overall		0.781			
		Abnormal	3	2.0	5	3.1	3	2.1	M vs. L	1.59 (0.37,6.78)	0.724			
		Normal	151	98.0	158	96.9	139	97.9	H vs. L	1.09 (0.22,5.47)	0.999			

TABLE I-1. (continued)
Unadjusted Exposure Index Analyses for Neurological Variables by Occupation

Variable	Occupation	Statistic	Exposure Index						Contrast	Est. Relative Risk (95% C.I.)	p-Value			
			Low		Medium		High							
			Number	Percent	Number	Percent	Number	Percent						
Vibratory Sensation	Officer	n	126		127		122		Overall		0.542			
		Abnormal	3	2.4	1	0.8	3	2.5	M vs. L	0.33 (0.03,3.17)	0.370			
		Normal	123	97.6	126	99.2	119	97.5	H vs. L	1.03 (0.21,5.22)	0.999			
	Enlisted Flyer	n	55		64		57		Overall		0.628			
		Abnormal	0	0.0	1	1.6	1	1.8	M vs. L	2.62 (0.11,65.68)*	0.999			
		Normal	55	100.0	63	98.4	56	98.2	H vs. L	2.95 (0.12,73.90)*	0.999			
Patellar Reflex	Enlisted Groundcrew	n	152		162		138		Overall		0.166			
		Abnormal	0	0.0	2	1.2	0	0.0	M vs. L	4.75 (0.23,99.76)*	0.499			
		Normal	152	100.0	160	98.8	138	100.0	H vs. L	—	—			
	Officer	n	127		130		123		Overall		0.156			
		Abnormal	0	0.0	1	0.8	3	2.4	M vs. L	2.95 (0.12,73.18)*	0.999			
		Normal	127	100.0	129	99.2	120	97.6	H vs. L	7.41 (0.38,144.90)*	0.118			
T-T1	Enlisted Flyer	n	55		65		57		Overall		0.992			
		Abnormal	1	1.8	1	1.5	1	1.8	M vs. L	0.84 (0.05,13.81)	0.999			
		Normal	54	98.2	64	98.5	56	98.2	H vs. L	0.96 (0.06,15.81)	0.999			
	Enlisted Groundcrew	n	154		163		142		Overall		0.170			
		Abnormal	3	2.0	0	0.0	1	0.7	M vs. L	0.13 (0.01,2.58)*	0.114			
		Normal	151	98.0	163	100.0	141	99.3	H vs. L	0.36 (0.04,3.47)	0.624			

TABLE I-1. (continued)

Unadjusted Exposure Index Analyses for Neurological Variables by Occupation

Variable	Occupation	Statistic	Exposure Index						Contrast	Est. Relative Risk (95% C.I.)	p-Value			
			Low		Medium		High							
			Number	Percent	Number	Percent	Number	Percent						
Achilles Reflex	Officer	n	124		129		123		Overall		0.774			
		Abnormal	8	6.5	6	4.7	8	6.5	M vs. L	0.71 (0.24,2.10)	0.591			
		Normal	116	93.5	123	95.3	115	93.5	H vs. L	1.01 (0.37,2.78)	0.999			
	Enlisted Flyer	n	55		64		57		Overall		0.059			
		Abnormal	5	9.1	0	0.0	4	7.0	M vs. L	0.07 (0.004,1.32)*	0.019			
		Normal	50	90.9	64	100.0	53	93.0	H vs. L	0.76 (0.19,2.97)	0.740			
	Enlisted Groundcrew	n	153		163		141		Overall		0.920			
		Abnormal	10	6.5	9	5.5	8	5.7	M vs. L	0.84 (0.33,2.12)	0.814			
		Normal	143	93.5	154	94.5	133	94.3	H vs. L	0.86 (0.33,2.25)	0.812			
Biceps Reflex	Officer	n	127		130		123		Overall		0.344			
		Abnormal	1	0.8	0	0.0	2	1.6	M vs. L	0.32 (0.01,8.01)*	0.494			
		Normal	126	99.2	130	100.0	121	98.4	H vs. L	2.08 (0.19,23.27)	0.618			
	Enlisted Flyer	n	55		65		57		Overall		0.420			
		Abnormal	0	0.0	1	1.5	0	0.0	M vs. L	2.58 (0.10,64.65)	0.999			
		Normal	55	100.0	64	98.5	57	100.0	H vs. L	—	—			
	Enlisted Groundcrew	n	154		163		142		Overall		0.515			
		Abnormal	1	0.7	3	1.8	1	0.7	M vs. L	2.87 (0.30,27.88)	0.623			
		Normal	153	99.3	160	98.2	141	99.3	H vs. L	1.09 (0.07,17.51)	0.999			

TABLE I-1. (continued)

Unadjusted Exposure Index Analyses for Neurological Variables by Occupation

Variable	Occupation	Statistic	Exposure Index						Contrast	Est. Relative Risk (95% C.I.)	p-Value			
			Low		Medium		High							
			Number	Percent	Number	Percent	Number	Percent						
Babinski Reflex	Officer	n	127		128		122		Overall					
		Abnormal	0	0.0	0	0.0	0	0.0	M vs. L					
		Normal	127	100.0	128	100.0	122	100.0	H vs. L					
	Enlisted Flyer	n	55		65		57		Overall					
		Abnormal	0	0.0	0	0.0	0	0.0	M vs. L					
		Normal	55	100.0	65	100.0	57	100.0	H vs. L					
	Enlisted Groundcrew	n	153		162		142		Overall		0.329			
		Abnormal	2	1.3	0	0.0	2	1.4	M vs. L	0.19 (0.01,3.92)*	0.235			
		Normal	151	98.7	162	100.0	140	98.6	H vs. L	1.08 (0.15,7.76)	0.999			
Tremor	Officer	n	127		130		123		Overall		0.248			
		Abnormal	5	3.9	1	0.8	3	2.4	M vs. L	0.19 (0.02,1.64)	0.117			
		Normal	122	96.1	129	99.2	120	97.6	H vs. L	0.61 (0.14,2.61)	0.722			
	Enlisted Flyer	n	55		65		57		Overall		0.609			
		Abnormal	1	1.8	3	4.6	3	5.3	M vs. L	2.61 (0.26,25.86)	0.624			
		Normal	54	98.2	62	95.4	54	94.7	H vs. L	3.00 (0.30,29.76)	0.618			
	Enlisted Groundcrew	n	154		163		142		Overall		0.312			
		Abnormal	5	3.3	4	2.5	1	0.7	M vs. L	0.75 (0.20,2.85)	0.744			
		Normal	149	96.7	159	97.5	141	99.3	H vs. L	0.21 (0.02,1.83)	0.216			

TABLE I-1. (continued)
Unadjusted Exposure Index Analyses for Neurological Variables by Occupation

Variable	Occupation	Statistic	Exposure Index						Contrast	Est. Relative Risk (95% C.I.)	p-Value			
			Low		Medium		High							
			Number	Percent	Number	Percent	Number	Percent						
T-1	Officer	n	127		130		123		Overall		0.603			
		Abnormal	0	0.0	1	0.8	1	0.8	M vs. L	2.95 (0.12,73.18)*	0.999			
		Normal	127	100.0	129	99.2	122	99.2	H vs. L	3.12 (0.13,77.39)*	0.492			
	Coordination Flyer	n	55		64		57		Overall		0.415			
		Abnormal	0	0.0	1	1.6	0	0.0	M vs. L	2.62 (0.11,65.68)*	0.999			
		Normal	55	100.0	63	98.4	57	100.0	H vs. L	—	—			
	Enlisted Groundcrew	n	154		163		142		Overall		0.516			
		Abnormal	2	1.3	1	0.6	3	2.1	M vs. L	0.47 (0.04,5.23)	0.613			
		Normal	152	98.7	162	99.4	139	97.9	H vs. L	1.64 (0.27,9.96)	0.674			
Romberg Sign	Officer	n	127		130		123		Overall		—			
		Abnormal	0	0.0	0	0.0	0	0.0	M vs. L	—	—			
		Normal	127	100.0	130	100.0	123	100.0	H vs. L	—	—			
	Enlisted Flyer	n	55		64		57		Overall		—			
		Abnormal	0	0.0	0	0.0	0	0.0	M vs. L	—	—			
		Normal	55	100.0	64	100.0	57	100.0	H vs. L	—	—			
	Enlisted Groundcrew	n	154		163		142		Overall		0.574			
		Abnormal	1	0.7	0	0.0	1	0.7	M vs. L	0.31 (0.01,7.74)	0.486			
		Normal	153	99.3	163	100.0	141	99.3	H vs. L	1.09 (0.07,17.51)	0.999			

TABLE I-1. (continued)

Unadjusted Exposure Index Analyses for Neurological Variables by Occupation

Variable	Occupation	Statistic	Exposure Index						Contrast	Est. Relative Risk (95% C.I.)	p-Value			
			Low		Medium		High							
			Number	Percent	Number	Percent	Number	Percent						
Gait	Officer	n	127		130		123		Overall		0.591			
		Abnormal	3	2.4	1	0.8	2	1.6	M vs. L	0.32 (0.03,3.12)	0.366			
		Normal	124	97.6	129	99.2	121	98.4	H vs. L	0.68 (0.11,4.16)	0.999			
	Enlisted Flyer	n	55		65		57		Overall		0.370			
		Abnormal	2	3.6	2	3.1	0	0.0	M vs. L	0.84 (0.12,6.18)	0.999			
		Normal	53	96.4	63	96.9	57	100.0	H vs. L	0.19 (0.01,3.97)*	0.239			
	Enlisted Groundcrew	n	154		163		142		Overall		0.580			
		Abnormal	4	2.6	2	1.2	4	2.8	M vs. L	0.47 (0.08,2.58)	0.437			
		Normal	150	97.4	161	98.8	138	97.2	H vs. L	1.09 (0.27,4.43)	0.999			
CNS Summary Index	Officer	n	127		130		123		Overall		0.123			
		Abnormal	8	6.3	2	1.5	4	3.3	M vs. L	0.23 (0.05,1.12)	0.058			
		Normal	119	93.7	128	98.5	119	96.7	H vs. L	0.50 (0.15,1.71)	0.377			
	Enlisted Flyer	n	55		64		57		Overall		0.810			
		Abnormal	3	5.5	5	7.8	3	5.3	M vs. L	1.47 (0.34,6.45)	0.724			
		Normal	52	94.5	59	92.2	54	94.7	H vs. L	0.96 (0.19,4.99)	0.999			
	Enlisted Groundcrew	n	154		163		142		Overall		0.585			
		Abnormal	10	6.5	7	4.3	6	4.2	M vs. L	0.65 (0.24,1.74)	0.459			
		Normal	144	93.5	156	95.7	136	95.8	H vs. L	0.64 (0.23,1.80)	0.448			

*Estimated relative risk and confidence interval calculated after adding 0.5 to each cell.

—No abnormals present in contrast; estimated relative risk, confidence interval, and p-value not calculated.

TABLE I-2.

**Interaction Summaries of Adjusted Exposure
Index Analyses for Selected Neurological Variables**

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Adj. Relative Risk (95% C.I.)	p-Value
				Low		Medium		High			
				Number	Percent	Number	Percent	Number	Percent	Contrast	
Cranial Nerve Function Index	Diabetic Exposure Index-by- Diabetic Class (Enlisted Groundcrew)	Diabetic	n	7		12		14		Overall	
			Abnormal	0	0.0	3	25.0	2	14.3	M vs. L	5.53 (0.25,124.40)**
			Normal	7	100.0	9	75.0	12	85.7	H vs. L	3.00 (0.13,71.31)**
	Impaired Exposure Index-by- Diabetic Class (Enlisted Groundcrew)	Impaired	n	11		14		18		Overall	
			Abnormal	0	0.0	2	14.3	0	0.0	M vs. L	4.60 (0.20,106.30)**
			Normal	11	100.0	12	85.7	18	100.0	H vs. L	—
	Normal ^a Exposure Index-by- Diabetic Class (Enlisted Groundcrew)	Normal ^a	n	133		135		109		Overall	
			Abnormal	15	11.3	7	5.2	7	6.4	M vs. L	0.55 (0.21,1.44)
			Normal	118	88.7	128	94.8	102	93.6	H vs. L	0.56 (0.22,1.44)
Light Touch	Yes ^b Exposure Index-by- Insecticide Exposure (Enlisted Flyer)	Yes ^b	n	38		45		40		Overall	
			Abnormal	1	2.6	2	4.4	4	10.0	M vs. L	0.42 (0.02,8.81)
			Normal	37	97.4	43	95.6	36	90.0	H vs. L	5.48 (0.41,71.54)
	No Exposure Index-by- Insecticide Exposure (Enlisted Flyer)	No	n	17		19		17		Overall	
			Abnormal	2	11.8	0	0.0	0	0.0	M vs. L	0.16 (0.01,3.56)**
			Normal	15	88.2	19	100.0	17	100.0	H vs. L	0.18 (0.01,3.98)**

TABLE I-2. (continued)

Interaction Summaries of Adjusted Exposure Index Analyses for Selected Neurological Variables

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Adj. Relative Risk (95% C.I.)	p-Value		
				Low		Medium		High					
				Number	Percent	Number	Percent	Number	Percent				
Muscle Status	Exposure Index-by-Age (Enlisted Groundcrew)	Born ≥ 1942	n	87		129		82		Overall	0.539*		
			Abnormal	1	1.1	2	1.6	0	0.0	H vs. L	1.35 (0.12,15.17)*		
			Normal	86	98.9	127	98.4	82	100.0	H vs. L	0.35 (0.01,8.70)**		
	Exposure Index-by-Age (Enlisted Groundcrew)	Born 1923-1941	n	63		33		54		Overall	0.436*		
			Abnormal	1	1.6	2	6.1	3	5.6	H vs. L	4.00 (0.35,45.84)*		
			Normal	62	98.4	31	93.9	51	94.4	H vs. L	3.65 (0.37,36.13)*		
	Exposure Index-by-Age (Enlisted Groundcrew)	Born ≤ 1922	n	4		1		6		Overall	0.051*		
			Abnormal	1	25.0	1	100.0	0	0.0	H vs. L	7.00 (0.17,291.34)**		
			Normal	3	75.0	0	0.0	6	100.0	H vs. L	0.18 (0.01,5.68)**		
Achilles Reflex	Exposure Index-by-Age (Enlisted Groundcrew)	Born $\geq 1942^b$	n	86		129		81		Overall	0.309		
			Abnormal	2	2.3	6	4.7	1	1.2	H vs. L	2.18 (0.43,11.12)		
			Normal	84	97.7	123	95.3	80	98.8	H vs. L	0.57 (0.05,6.37)		
	Exposure Index-by-Age (Enlisted Groundcrew)	Born 1923-1941 ^b	n	63		33		54		Overall	0.649		
			Abnormal	5	7.9	2	6.1	6	11.1	H vs. L	0.64 (0.11,3.75)		
			Normal	58	92.1	31	93.9	48	88.9	H vs. L	1.40 (0.38,5.19)		
	Exposure Index-by-Age (Enlisted Groundcrew)	Born ≤ 1922	n	4		1		6		Overall	0.100*		
			Abnormal	3	75.0	1	100.0	1	16.7	H vs. L	1.29 (0.03,53.51)**		
			Normal	1	25.0	0	0.0	5	83.3	H vs. L	0.07 (0.003,1.51)*		

TABLE I-2. (continued)

**Interaction Summaries of Adjusted Exposure
Index Analyses for Selected Neurological Variables**

Variable	Interaction (Occupation)	Stratification	Statistic	Exposure Index						Adj. Relative Risk (95% C.I.)	p-Value
				Low		Medium		High			
				Number	Percent	Number	Percent	Number	Percent	Contrast	
Central Nervous System Index	Exposure Index-by- Insecticide Exposure (Enlisted Groundcrew)	Yes ^b	n	102		113		95		Overall	0.560
			Abnormal	4	3.9	7	6.2	3	3.2	H vs. L	1.68 (0.48,5.95)
			Normal	98	96.1	106	93.8	92	96.8	H vs. L	0.87 (0.19,3.99)
	(Enlisted Groundcrew)	No	n	52		50		47		Overall	0.050*
			Abnormal	6	11.5	0	0.0	3	6.4	H vs. L	0.07 (0.004,1.29)**
			Normal	46	88.5	50	100.0	44	93.6	H vs. L	0.38 (0.10,1.54)*

*Estimated relative risk or p-value, based on stratified tables.

**Estimated relative risk and confidence interval calculated after adding 0.5 to each cell.

—No abnormal participants present in contrast; adjusted relative risk, p-value, and confidence interval not presented.

^aResults adjusted for age.

^bResults adjusted for diabetic class.

Note: Small sample sizes may affect validity of overall p-value.

TABLE I-3.

**Exclusions and Missing Data
for Neurological Assessment by Group
(Original Comparisons Only)**

Data Category	Group		
	Ranch Hand	Original Comparison	Total
Lifetime Alcohol History (Drink-years); Missing Data	39	27	66
Peripheral Edema (Exclusion Category for Pin Prick, Light Touch, and Ankle Vibration)	13	12	25
Diabetic Class (Missing Data)	0	3	3
Positive Syphilis Serology (RPR and FTA); Exclusion Category	0	0	0

TABLE I-4.
Unadjusted Analyses for Verified Neurological
Diseases by Group*1982-1985**
(Original Comparisons Only)

Disease Category	Group Abnormalities				Total	p-Value**
	Ranch Hand	Number	Percent	Original Comparison		
Inflammatory Diseases	0	0.0	0	0.0	0	—
Hereditary and Degenerative Diseases	2	0.2	0	0.0	2	0.500
Peripheral Disorders	18	1.8	20	2.1	38	0.626
Disorders of the Eye	5	0.5	5	0.5	10	0.999
Disorders of the Ear	6	0.6	6	0.6	12	0.999
Other Disorders	8	0.8	3	0.3	11	0.288

*Based on 1,016 Ranch Hands and 955 Original Comparisons; some participants may be classified in more than one category.

**Fisher's exact test.

TABLE I-5.

**Unadjusted Analyses for Verified Neurological
Diseases by Group*--Baseline and First Followup Studies Combined
(Original Comparisons Only)**

Disease Category			<u>Group Abnormalities</u>		Total	p-Value***
	Ranch Hand	Original Comparison	Number	Percent		
Inflammatory Diseases	3	0.3	2	0.2	5	0.999
Hereditary and Degenerative Diseases	2	0.2	3	0.3	5	0.678
Peripheral Disorders	23	2.3	27	2.8	50	0.475
Disorders of the Eye	16	1.6	16	1.7	32	0.861
Disorders of the Ear	24	2.4	26	2.7	50	0.668
Other Disorders	15	1.5	12	1.3	27	0.703

*Based on 1,016 Ranch Hands and 955 Original Comparisons; some participants may be classified in more than one category.

**Fisher's exact test.

***Group significance for patterns of disease: p=0.702.

TABLE I-6.
Unadjusted Analyses for Cranial Nerve Function by Group (Original Comparisons Only)

Variable	Cranial Nerve	Statistic	Group				Est. Relative Risk (95% C.I.)	p-Value
			Ranch Hand Number	Ranch Hand Percent	Original Comparison Number	Original Comparison Percent		
Smell	I Olfactory	n	1,016		955			
		Abnormal	10	1.0	9	0.9	1.05 (0.42,2.58)	0.999
		Normal	1,006	99.0	946	99.1		
Visual Fields	II Optic	n	1,016		955			
		Abnormal	6	0.6	4	0.4	1.41 (0.40,5.02)	0.754
		Normal	1,010	99.4	951	99.6		
Light Reaction	III Oculomotor	n	1,015		954			
		Abnormal	8	0.8	7	0.7	1.08 (0.39,2.98)	0.999
		Normal	1,007	99.2	947	99.3		
Ocular Movements	III Oculomotor IV Trochlear VI Abducens	n	1,016		955			
		Abnormal	6	0.6	5	0.5	1.13 (0.34,3.71)	0.999
		Normal	1,010	99.4	950	99.5		
Facial Sensation	V Trigeminal	n	1,014		953			
		Abnormal	4	0.4	2	0.2	1.88 (0.34,10.31)	0.688
		Normal	1,010	99.6	951	99.8		
Jaw Clench	V Trigeminal	n	1,016		955			
		Abnormal	2	0.2	1	0.1	1.88 (0.17,20.79)	0.999
		Normal	1,014	99.8	954	99.9		
Smile	VII Facial	n	1,016		955			
		Abnormal	7	0.7	2	0.2	3.31 (0.69,15.95)	0.181
		Normal	1,009	99.3	953	99.8		
Palpebral Fissures	VII Facial	n	1,015		955			
		Abnormal	7	0.7	5	0.5	1.32 (0.42,4.17)	0.775
		Normal	1,008	99.3	950	99.5		

TABLE I-6. (continued)

Unadjusted Analyses for Cranial Nerve Function by Group (Original Comparisons Only)

Variable	Cranial Nerve	Statistic	Group				Est. Relative Risk (95% C.I.)	p-Value
			Ranch Hand Number	Ranch Hand Percent	Original Comparison Number	Original Comparison Percent		
Balance	VIII Acoustic	n	1,015		955		1.88 (0.17,20.81)	0.999
		Abnormal	2	0.2	1	0.1		
Gag Reflex	IX Glossopharyngeal	n	1,014		955		0.94 (0.06,15.08)	0.999
		Abnormal	1	0.1	1	0.1		
Speech	X Vagus	n	1,016		954		6.59 (0.34,127.80)* 0.250	0.250
		Abnormal	3	0.3	0	0.0		
Tongue Position Relative to Midline	X Vagus	n	1,015		955		6.61 (0.34,128.06)* 0.250	0.250
		Abnormal	3	0.3	0	0.0		
Palate and Uvula Movement	XI Spinal Accessory	n	1,014		955		1.89 (0.17,20.83)	0.999
		Abnormal	2	0.2	1	0.1		
Neck Range of Motion	XII Hypoglossal	n	1,016		955		0.89 (0.62,1.28)	0.579
		Abnormal	61	6.0	64	6.7		
Cranial Nerve Function Index		n	1,003		941		1.01 (0.75,1.37)	0.939
		Abnormal	96	9.6	89	9.5		
		Normal	907	90.4	852	90.5		

TABLE I-6. (continued)

Unadjusted Analyses for Cranial Nerve
Function by Group (Original Comparisons Only)

Variable	Cranial Nerve	Statistic	Group		Original Comparison Number Percent	Est. Relative Risk (95% C.I.)	p-Value
			Ranch Hand Number	Ranch Hand Percent			
Cranial Nerve Function Index (Neck Range of Motion Excluded)	n		1,003		941		
	Abnormal		42	4.2	29	3.1	1.34 (0.85,2.23) 0.226
	Normal		961	95.8	912	96.9	

*Estimated relative risk and confidence interval calculated after adding 0.5 to each cell.

TABLE I-7.

Adjusted Analyses for Selected Variables of Cranial Nerve Function by Group (Original Comparisons Only)

Variable	Statistic	Group		Original Comparison Number Percent	Adj. Relative Risk (95% C.I.)	p-Value	Covariate Remarks*
		Ranch Hand Number	Percent				
Neck Range of Motion	n	1,016		955			
	Abnormal	61	6.0	64	6.7	0.92 (0.64,1.57)	0.647
	Normal	955	94.0	891	93.3		AGE(p<0.001)
Cranial Nerve Function Index	n	1,003		941			
	Abnormal	96	9.6	89	9.5	1.04 (0.76,1.41)	0.812
	Normal	907	90.4	852	90.5		AGE(p<0.001)
Cranial Nerve Function Index	n	964		911			
	Abnormal	38	3.9	28	3.1	1.27 (0.77,2.12)	0.350
	Normal	926	96.1	883	96.9		DIAB*INS(p=0.032) OCC*DRYR(p=0.016) OCC*DIAB(p=0.032)
(Neck Range of Motion Excluded)	n	1,003		938			
	Abnormal	42	4.2	28	3.0	1.41 (0.86,2.32)	0.170
	Normal	961	95.8	910	97.0		DIAB*INS(p=0.022) OCC*DIAB(p=0.027)

*Abbreviations:

DIAB: diabetic class
 INS: insecticide exposure
 OCC: occupation
 DRYR: drink-years

^aLifetime alcohol consumption (drink-years) not used as a covariate.

^b66 missing drink-year participants: 4/39 Ranch Hands abnormal; 0/27 Original Comparisons abnormal.

TABLE I-8.
Unadjusted Analyses for Peripheral Nerve Function by Group
(Original Comparisons Only)

Variable	Statistic	Group		Original Comparison		Est. Relative Risk (95% C.I.)	p-Value
		Ranch Hand Number	Percent	Number	Percent		
Pin Prick	n	1,003		943		0.89 (0.62,1.28)	0.573
	Abnormal	59	5.9	62	6.6		
	Normal	944	94.1	881	93.4		
Light Touch	n	1,003		943		1.09 (0.68,1.75)	0.809
	Abnormal	38	3.8	33	3.5		
	Normal	965	96.2	910	96.5		
Muscle Status	n	1,016		955		0.94 (0.54,1.63)	0.888
	Abnormal	26	2.6	26	2.7		
	Normal	990	97.4	929	97.3		
Vibratory Sensation	n	1,003		943		1.48 (0.57,3.84)	0.482
	Abnormal	11	1.1	7	0.7		
	Normal	992	98.9	936	99.3		
Patellar Reflex	n	1,016		954		0.74 (0.33,1.63)	0.547
	Abnormal	11	1.1	14	1.5		
	Normal	1,005	98.9	940	98.5		
Achilles Reflex	n	1,009		950		0.87 (0.60,1.26)	0.510
	Abnormal	58	5.7	62	6.5		
	Normal	951	94.3	888	93.5		
Biceps Reflex	n	1,016		955		0.85 (0.34,2.09)	0.819
	Abnormal	9	0.9	10	1.0		
	Normal	1,007	99.1	945	99.0		
Babinski Reflex	n	1,011		951		0.94 (0.24,3.77)	0.999
	Abnormal	4	0.4	4	0.4		
	Normal	1,007	99.6	947	99.6		

TABLE I-9.
Adjusted Analyses for Selected Variables of
Peripheral Nerve Function by Group
(Original Comparisons Only)

Variable	Statistic	Group				Adj. Relative Risk (95% C.I.)	p-Value	Covariate Remarks*
		Rand Hand		Original Comparison				
		Number	Percent	Number	Percent			
Pin Prick	n	1,003		941				
	Abnormal	59	5.9	61	6.5		****	GRP*DIAB(p=0.001)
	Normal	944	94.1	880	93.5			AGE(p<0.001)
Light Touch	n	964		914				
	Abnormal	37	3.8	31	3.4	1.12 (0.69,1.82)	0.652	AGE(p=0.049)
	Normal	927	96.2	883	96.6			DRKIR(p=0.014)
Muscle Status	n	977		925				
	Abnormal	25	2.6	24	2.6	1.04 (0.57,1.89)	0.893	DRKIR*AGE(p=0.037)
	Normal	952	97.4	901	97.4			DIAB*INS(p=0.028)
Achilles Reflex	n	1,009		947				
	Abnormal	58	5.7	61	6.4	0.92 (0.63,1.35)	0.677	AGE(p<0.001)
	Normal	951	94.3	886	93.6			DIAB(p<0.001)

*Additional Abbreviation:

GRP: group

****Group-by-covariate interaction--adjusted relative risk, confidence interval, and p-value are not presented.

TABLE I-10.

**Summary of Group-by-Diabetic Class
Interaction for Pin Prick
(Original Comparisons Only)**

Variable	Interaction	Stratification	Statistic	Group		Original Comparison Number Percent	Adj. Relative Risk (95% C.I.)	p-Value
				Ranch Band Number	Band Percent			
Pin Prick Diabetic Class	Abnormal	Normal	n	76		74		
			Abnormal	13	17.1	7	9.5	2.03 (0.76,5.43) 0.161
			Normal	63	82.9	67	90.5	
	Impaired	Normal	n	105		135		
			Abnormal	1	1.0	14	10.4	0.08 (0.01,0.61) 0.015
			Normal	104	99.0	121	89.6	
	Normal	Normal	n	822		732		
			Abnormal	45	5.5	40	5.5	1.01 (0.65,1.57) 0.951
			Normal	777	94.5	692	94.5	

TABLE I-11.
Unadjusted Analyses for CNS Coordination Variables by Group
(Original Comparisons Only)

Variable	Statistic	Group		Original Comparison Number Percent	Est. Relative Risk (95% C.I.)	p-Value
		Ranch Hand Number	Ranch Hand Percent			
Tremor	n	1,016		955		
	Abnormal	26	2.6	14	1.5	1.77 (0.92,3.40)
	Normal	990	97.4	941	98.5	0.110
Coordination	n	1,015		955		
	Abnormal	9	0.9	7	0.7	1.21 (0.45,3.27)
	Normal	1,006	99.1	948	99.3	0.804
Romberg Sign	n	1,015		955		
	Abnormal	2	0.2	1	0.1	1.88 (0.17,20.81)
	Normal	1,013	99.8	954	99.9	0.999
Gait	n	1,016		954		
	Abnormal	20	2.0	11	1.2	1.72 (0.82,3.61)
	Normal	996	98.0	943	98.8	0.153
CNS Summary Index	n	1,015		954		
	Abnormal	48	4.7	29	3.0	1.58 (0.99,2.53)
	Normal	967	95.3	925	97.0	0.062

TABLE I-12.

**Adjusted Analyses for Selected Variables of
CNS Coordination by Group (Original Comparisons Only)**

Variable	Statistic	Group		Original Comparison		Adj. Relative Risk (95% C.I.)	p-Value	Covariate Remarks
		Ranch Hand Number	Hand Percent	Number	Percent			
Tremor	n	1,016		952		1.68 (0.87,3.25)	0.112	DIAB(p=0.002)
	Abnormal	26	2.6	14	1.5			
	Normal	990	97.4	938	98.5			
Gait	n	1,016		951		1.85 (0.86,3.99)	0.105	DIAB(p=0.035)
	Abnormal	20	2.0	10	1.1			
	Normal	996	98.0	941	98.9			
CNS Summary Index	n	1,015		951		1.58 (0.98,2.55)	0.055	DIAB(p=0.009)
	Abnormal	48	4.7	28	2.9			
	Normal	967	95.3	923	97.1			

TABLE I-13.

**Longitudinal Analysis of Romberg Sign and Babinski Reflex:
A Contrast of Baseline and Followup Examination Abnormalities
(Original Comparisons Only)**

Variable	Group	1982 Baseline Exam	1985 Followup Exam		Odds Ratio (OR)* (OR_{RH} vs OR_{OC})	p-Value
			Abnormal	Normal		
Romberg Sign	Ranch Hand	Abnormal	2	188	0	0.31
		Normal	0	777		
Babinski Reflex	Original Comparison	Abnormal	0	180	0.006	0.07
		Normal	1	690		
Romberg Sign	Ranch Hand	Abnormal	1	7	0.43	0.07
		Normal	3	953		
Babinski Reflex	Original Comparison	Abnormal	0	1	4.00	0.07
		Normal	4	863		

*Odds Ratio:
$$\frac{\text{Number Normal Baseline, Abnormal Followup}}{\text{Number Abnormal Baseline, Normal Followup}}$$