

**Table 11-7. Analysis of Smell (Continued)**

<b>(d) MODEL 2: RANCH HANDS – INITIAL DIOXIN – ADJUSTED</b>			
Analysis Results for Log <sub>2</sub> (Initial Dioxin)			
		Adjusted Relative Risk	
n		(95% C.I.) <sup>a</sup>	p-Value
469		0.83 (0.46,1.50)	0.534

<sup>a</sup> Relative risk for a twofold increase in initial dioxin.

Note: Results are not adjusted for race because of the sparse number of Ranch Hands with an abnormal sense of smell.

<b>(e) MODEL 3: RANCH HANDS AND COMPARISONS BY DIOXIN CATEGORY – UNADJUSTED</b>				
Dioxin Category	n	Number (%)	Est. Relative Risk	p-Value
Comparison	1,209	18 (1.5)		
Background RH	378	8 (2.1)	1.42 (0.61,3.31)	0.420
Low RH	238	7 (2.9)	2.01 (0.83,4.86)	0.122
High RH	239	4 (1.7)	1.14 (0.38,3.40)	0.821
Low plus High RH	477	11 (2.3)	1.51 (0.69,3.29)	0.300

<sup>a</sup> Relative risk and confidence interval relative to Comparisons.

<sup>b</sup> Adjusted for percent body fat at the time of the blood measurement of dioxin.

Note: RH = Ranch Hand.

Comparison: 1987 Dioxin  $\leq$  10 ppt.

Background (Ranch Hand): 1987 Dioxin  $\leq$  10 ppt.

Low (Ranch Hand): 1987 Dioxin  $>$  10 ppt, 10 ppt  $<$  Initial Dioxin  $\leq$  94 ppt.

High (Ranch Hand): 1987 Dioxin  $>$  10 ppt, Initial Dioxin  $>$  94 ppt.

<b>(f) MODEL 3: RANCH HANDS AND COMPARISONS BY DIOXIN CATEGORY – ADJUSTED</b>			
Dioxin Category	n	Adjusted Relative Risk	p-Value
Comparison	1,191		
Background RH	373	1.04 (0.40,2.73)	0.929
Low RH	234	1.57 (0.61,4.06)	0.353
High RH	235	0.82 (0.23,2.92)	0.758
Low plus High RH	469	1.13 (0.48,2.68)	0.777

<sup>a</sup> Relative risk and confidence interval relative to Comparisons.

Note: RH = Ranch Hand.

Comparison: 1987 Dioxin  $\leq$  10 ppt.

Background (Ranch Hand): 1987 Dioxin  $\leq$  10 ppt.

Low (Ranch Hand): 1987 Dioxin  $>$  10 ppt, 10 ppt  $<$  Initial Dioxin  $\leq$  94 ppt.

High (Ranch Hand): 1987 Dioxin  $>$  10 ppt, Initial Dioxin  $>$  94 ppt.

**Table 11-7. Analysis of Smell (Continued)**

<b>(g) MODEL 4: RANCH HANDS – 1987 DIOXIN – UNADJUSTED</b>				
1987 Dioxin Category Summary Statistics		Analysis Results for $\log_2$ (1987 Dioxin + 1)		
1987 Dioxin	n	Number (%) Abnormal	Estimated Relative Risk (95% C.I.) <sup>a</sup>	p-Value
Low	285	7 (2.5)	0.89 (0.65,1.23)	0.481
Medium	286	6 (2.1)		
High	284	6 (2.1)		

<sup>a</sup> Relative risk for a twofold increase in 1987 dioxin.

Note: Low =  $\leq 7.9$  ppt; Medium =  $> 7.9$ – $19.6$  ppt; High =  $> 19.6$  ppt.

**(h) MODEL 4: RANCH HANDS – 1987 DIOXIN – ADJUSTED**

Analysis Results for $\log_2$ (1987 Dioxin + 1)		
n	Adjusted Relative Risk (95% C.I.) <sup>a</sup>	p-Value
842	0.83 (0.56,1.22)	0.333

<sup>a</sup> Relative risk for a twofold increase in 1987 dioxin.

Note: Results are not adjusted for race because of the sparse number of Ranch Hands with an abnormal sense of smell.

#### 11.2.2.2.2 Visual Fields

All results from the analysis of visual fields from Models 1, 3, and 4 were nonsignificant (Table 11-8(a,b,e–h):  $p>0.38$  for each analysis). A significant positive association between visual fields and initial dioxin was found in both the unadjusted and adjusted Model 2 analyses (Table 11-8(c,d): Est. RR=3.93,  $p=0.040$ ; and Adj. RR=4.37,  $p=0.049$ , respectively). One Ranch Hand in the high initial dioxin category had abnormal visual fields.

**Table 11-8. Analysis of Visual Fields**

**(a) MODEL 1: RANCH HANDS VS. COMPARISONS – UNADJUSTED**

Occupational Category	Group	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.)	p-Value
<i>All</i>	<i>Ranch Hand</i>	866	2 (0.2)	0.57 (0.11,2.97)	0.493
	<i>Comparison</i>	1,245	5 (0.4)		
Officer	Ranch Hand	340	0 (0.0)	--	0.999 <sup>a</sup>
	Comparison	492	1 (0.2)		
Enlisted Flyer	Ranch Hand	151	1 (0.7)	0.61 (0.06,6.83)	0.691
	Comparison	186	2 (1.1)		
Enlisted Groundcrew	Ranch Hand	375	1 (0.3)	0.76 (0.07,8.36)	0.819
	Comparison	567	2 (0.4)		

<sup>a</sup> P-value determined using a chi-square test with continuity correction because of the sparse number of participants with abnormal visual fields.

--: Results not presented because of the sparse number of participants with abnormal visual fields.

**(b) MODEL 1: RANCH HANDS VS. COMPARISONS – ADJUSTED**

Occupational Category	Adjusted Relative Risk (95% C.I.)	p-Value
<i>All</i>	0.49 (0.09,2.64)	0.387
Officer	--	--
Enlisted Flyer	0.48 (0.04,5.78)	0.566
Enlisted Groundcrew	0.70 (0.06,8.00)	0.778

--: Results not presented because of the sparse number of participants with abnormal visual fields.

**(c) MODEL 2: RANCH HANDS – INITIAL DIOXIN – UNADJUSTED**

Initial Dioxin Category Summary Statistics		Analysis Results for Log <sub>2</sub> (Initial Dioxin) <sup>a</sup>	
Initial Dioxin	n	Number (%) Abnormal	Estimated Relative Risk (95% C.I.) <sup>b</sup>
Low	160	0 (0.0)	3.93 (0.93,16.64)
Medium	162	0 (0.0)	
High	157	1 (0.6)	

<sup>a</sup> Adjusted for percent body fat at the time of the blood measurement of dioxin.

<sup>b</sup> Relative risk for a twofold increase in initial dioxin.

Note: Low = 27–63 ppt; Medium = >63–152 ppt; High = >152 ppt.