

Table N-1-1.
Dependent Variable-Covariate Associations for the Endocrine Assessment

Dependent Variable	Level	Age			Race		
		Born ≥1942	Born <1942	p-Value	Black	Non-Black	p-Value
Past Thyroid Disease	Yes	(n=953) 4.0%	(n=1,267) 6.6%	0.009	(n=131) 4.6%	(n=2,089) 5.6%	0.782
Composite Diabetes Indicator	Yes	(n=953) 8.2%	(n=1,272) 19.1%	<0.001	(n=131) 19.9%	(n=2,094) 14.1%	0.091
Diabetic Severity	No Treatment	(n=954) 5.1%	(n=1,274) 11.0%	<0.001	(n=131) 13.0%	(n=2,097) 8.2%	0.021
	Diet Only	1.8%	3.5%		0.8%	2.9%	
	Oral Hypoglycemic	0.9%	2.5%		4.6%	1.7%	
	Insulin Dependent	0.3%	2.0%		1.5%	1.3%	
Time to Diabetes Onset (years) ^a		(n=2,227) $\beta=-0.024$		<0.001	(n=131) $\beta=-0.160^b$	(n=2,096)	0.069
Thyroid Gland	Abnormal	(n=946) 0.6%	(n=1,227) 0.7%	0.987	(n=130) 0.8%	(n=2,043) 0.7%	0.999
Testicular Volume: Minimum (cm ³)		(n=2,207) $r=-0.153$		<0.001	(n=130) $\bar{x}=14.30$	(n=2,077) $\bar{x}=16.02$	<0.001
Testicular Volume: Total (cm ³)		(n=2,207) $r=-0.140$		<0.001	(n=130) $\bar{x}=30.55$	(n=2,077) $\bar{x}=34.20$	<0.001
Retinopathy Results (Diabetics)	Abnormal	(n=78) 1.3%	(n=241) 4.6%	0.326	(n=26) 3.9%	(n=293) 3.8%	0.999
Neuropathy Results (Diabetics)	Abnormal	(n=78) 3.9%	(n=243) 10.7%	0.107	(n=26) 19.2%	(n=295) 8.1%	0.125
Radial Pulses (Diabetics)	Abnormal	(n=78) 0.0%	(n=243) 1.2%	0.757	(n=26) 0.0%	(n=295) 1.0%	0.999
Femoral Pulses (Diabetics)	Abnormal	(n=78) 1.3%	(n=243) 3.7%	0.486	(n=26) 3.9%	(n=295) 3.1%	0.999
Popliteal Pulses (Diabetics)	Abnormal	(n=78) 1.3%	(n=243) 4.9%	0.273	(n=26) 3.9%	(n=295) 4.1%	0.999
Dorsalis Pedis Pulses (Diabetics)	Abnormal	(n=78) 7.7%	(n=243) 16.5%	0.082	(n=26) 19.2%	(n=295) 13.9%	0.651
Posterior Tibial Pulses (Diabetics)	Abnormal	(n=78) 1.3%	(n=243) 9.5%	0.032	(n=26) 11.5%	(n=295) 7.1%	0.665
Leg Pulses (Diabetics)	Abnormal	(n=78) 7.7%	(n=243) 18.1%	0.043	(n=26) 23.1%	(n=295) 14.9%	0.413
Peripheral Pulses (Diabetics)	Abnormal	(n=78) 7.7%	(n=243) 18.9%	0.030	(n=26) 23.1%	(n=295) 15.6%	0.474

^aEstimated from a failure time analysis model, using the censored Weibull distribution.

^bEstimated coefficient relative to non-Blacks.

Table N-1-1. (Continued)
Dependent Variable-Covariate Associations for the Endocrine Assessment

Dependent Variable	Level	Age			Race		
		Born ≥1942	Born <1942	p-Value	Black	Non-Black	p-Value
Thyroid Stimulating Hormone (TSH) (μIU/ml)		(n=944)	(n=1,225)		(n=131)	(n=2,038)	
(continuous)		r=0.088		<0.001	$\bar{x}$ =1.19	$\bar{x}$ =1.62	<0.001
(discrete)	Abnormal High	1.7%	2.9%	0.077	0.0%	2.5%	0.125
Thyroxine (T ₄) (μg/dl)		(n=944)	(n=1,225)		(n=131)	(n=2,038)	
(continuous)		r=0.013		0.545	$\bar{x}$ =7.77	$\bar{x}$ =7.82	0.711
(discrete)	Abnormal Low	0.5%	0.7%	0.748	0.8%	0.6%	0.999
Anti-Thyroid Antibodies	Abnormal	(n=944)	(n=1,225)		(n=131)	(n=2,038)	
		3.1%	3.0%	0.999	2.3%	3.1%	0.799
Fasting Glucose (mg/dl)		(n=953)	(n=1,274)		(n=131)	(n=2,096)	
(All Participants)		r=0.191		<0.001	$\bar{x}$ =109.06	$\bar{x}$ =104.03	0.008
(continuous)							
(discrete)	Abnormal High	7.0%	17.8%	<0.001	21.4%	12.7%	0.007
Fasting Glucose (mg/dl)		(n=78)	(n=243)		(n=26)	(n=295)	
(Diabetics)		r=0.050		0.367	$\bar{x}$ =160.58	$\bar{x}$ =140.48	0.058
(continuous)							
(discrete)	Abnormal High	59.0%	72.4%	0.036	84.6%	67.8%	0.119
Fasting Glucose (mg/dl)		(n=875)	(n=1,031)		(n=105)	(n=1,801)	
(Nondiabetics)		r=0.169		<0.001	$\bar{x}$ =99.10	$\bar{x}$ =99.04	0.946
(continuous)							
(discrete)	Abnormal High	2.4%	5.0%	0.005	5.7%	3.7%	0.419
2-Hour Postprandial Glucose (Nondiabetics)		(n=875)	(n=1,029)		(n=105)	(n=1,799)	
(mg/dl)		r=0.188		<0.001	$\bar{x}$ =103.09	$\bar{x}$ =103.56	0.867
(continuous)							
(discrete)	Impaired	8.9%	16.8%	<0.001	9.5%	13.4%	0.321
Fasting Urinary Glucose (All Participants)	Present	(n=951)	(n=1,273)		(n=131)	(n=2,093)	
		1.6%	4.2%	0.001	6.1%	2.9%	0.068
Fasting Urinary Glucose (Diabetics)	Present	(n=78)	(n=242)		(n=26)	(n=294)	
		19.2%	21.5%	0.790	30.8%	20.1%	0.301
2-Hour Postprandial Urinary Glucose (Nondiabetics)	Present	(n=873)	(n=1,028)		(n=104)	(n=1,797)	
		15.9%	20.5%	0.012	16.4%	18.5%	0.668

Table N-1-1. (Continued)
Dependent Variable-Covariate Associations for the Endocrine Assessment

Dependent Variable	Level	Age			Race		
		Born ≥1942	Born <1942	p-Value	Black	Non-Black	p-Value
Serum Insulin (mIU/ml) (All Participants) (continuous) (discrete)		(n=2,227) r=0.103		<0.001	(n=131) $\bar{x}$ =56.9	(n=2,096) $\bar{x}$ =67.0	0.048
	Abnormal Low	(n=953) 6.0%	(n=1,274) 3.5%	<0.001	6.1%	4.4%	0.502
	Abnormal High	51.1%	60.9%		52.7%	57.0%	
Serum Insulin (mIU/ml) (Diabetics) (continuous) (discrete)		(n=321) r=-0.004		0.939	(n=26) $\bar{x}$ =27.5	(n=295) $\bar{x}$ =61.0	0.001
	Abnormal Low	(n=78) 0.0%	(n=243) 0.8%	0.186	7.7%	0.0%	<0.001
	Abnormal High	50.0%	60.1%		38.5%	59.3%	
Serum Insulin (mIU/ml) (Nondiabetics) (continuous) (discrete)		(n=1,906) r=0.147		<0.001	(n=105) $\bar{x}$ =68.2	(n=1,801) $\bar{x}$ =68.1	0.987
	Abnormal Low	(n=875) 6.5%	(n=1,031) 4.1%	<0.001	5.7%	5.2%	0.970
	Abnormal High	51.2%	61.1%		56.2%	56.6%	
Serum Glucagon (pg/ml) (All Participants) (continuous) (discrete)		(n=1,931) r=0.105		<0.001	(n=114) $\bar{x}$ =54.7	(n=1,817) $\bar{x}$ =56.5	0.213
	Abnormal	(n=787) 0.0%	(n=1,144) 0.4%	0.250	0.9%	0.2%	0.575
Serum Glucagon (pg/ml) (Diabetics) (continuous) (discrete)		(n=285) r=0.048		0.417	(n=22) $\bar{x}$ =67.8	(n=263) $\bar{x}$ =65.4	0.620
	Abnormal	(n=64) 0.0%	(n=221) 1.8%	0.631	4.6%	1.1%	0.718
Serum Glucagon (pg/ml) (Nondiabetics) (continuous)		(n=1,646) r=0.066		0.007	(n=92) $\bar{x}$ =52.0	(n=1,554) $\bar{x}$ =55.1	0.024
α-1-C Hemoglobin (percent) (All Participants) (continuous) (discrete)		(n=2,227) r=0.165		<0.001	(n=131) $\bar{x}$ =7.80	(n=2,096) $\bar{x}$ =7.12	<0.001
	Abnormal	(n=953) 21.3%	(n=1,274) 30.5%	<0.001	48.1%	25.2%	<0.001

Table N-1-1. (Continued)
Dependent Variable-Covariate Associations for the Endocrine Assessment

Dependent Variable	Level	Age			Race		
		Born ≥1942	Born <1942	p-Value	Black	Non-Black	p-Value
α-1-C Hemoglobin (percent) (Diabetics) (continuous) (discrete)		(n=321) r=0.068		0.225	(n=26) $\bar{x}$ =10.65	(n=295) $\bar{x}$ =8.89	0.001
	Abnormal	(n=78) 71.8%	(n=243) 79.8%	0.183	88.5%	77.0%	0.267
α-1-C Hemoglobin (percent) (Nondiabetics) (continuous) (discrete)		(n=1,906) r=0.091		<0.001	(n=105) $\bar{x}$ =7.22	(n=1,801) $\bar{x}$ =6.87	<0.001
	Abnormal	(n=875) 16.8%	(n=1,031) 18.9%	0.255	38.1%	16.8%	<0.001
Urinary Protein (Diabetics)	Abnormal	(n=78) 12.8%	(n=242) 14.5%	0.861	(n=26) 15.4%	(n=294) 14.0%	0.999
Serum Proinsulin (ng/ml) (Diabetics) (continuous) (discrete)		(n=307) r=0.002		0.978	(n=25) $\bar{x}$ =0.426	(n=282) $\bar{x}$ =0.803	0.019
	Abnormal	(n=73) 41.1%	(n=234) 42.3%	0.962	28.0%	43.3%	0.204
Serum C Peptide (ng/ml) (Diabetics) (continuous) (discrete)		(n=307) r=0.024		0.673	(n=25) $\bar{x}$ =4.83	(n=282) $\bar{x}$ =8.93	0.003
	Abnormal	(n=73) 56.2%	(n=234) 62.8%	0.378	44.0%	62.8%	0.103
Total Testosterone (ng/ml) (continuous) (discrete)		(n=2,207) r=-0.104		<0.001	(n=130) $\bar{x}$ =528.4	(n=2,077) $\bar{x}$ =501.8	0.112
	Abnormal	(n=950) 4.5%	(n=1,257) 5.4%	0.400	3.9%	5.1%	0.668
Free Testosterone (pg/ml) (continuous) (discrete)		(n=2,207) r=-0.292		<0.001	(n=130) $\bar{x}$ =19.45	(n=2,077) $\bar{x}$ =18.42	0.062
	Abnormal	(n=950) 21.9%	(n=1,257) 14.6%	<0.001	20.8%	17.6%	0.420
Sex Hormone Binding Globulin	Abnormal	(n=950) 17.1%	(n=1,257) 17.8%	0.679	(n=130) 26.2%	(n=2,077) 17.0%	0.010
Total Testosterone to Sex Hormone Binding Globulin Ratio	Abnormal	(n=950) 5.7%	(n=1,257) 13.1%	<0.001	(n=130) 7.7%	(n=2,077) 10.0%	0.478

Table N-1-1. (Continued)
Dependent Variable-Covariate Associations for the Endocrine Assessment

Dependent Variable	Level	Age			Race		
		Born ≥1942	Born <1942	p-Value	Black	Non-Black	p-Value
Estradiol (pg/ml) (continuous) (discrete)		(n=2,232) r=-0.081		<0.001	(n=131) $\bar{x}$ =37.04	(n=2,101) $\bar{x}$ =31.87	<0.001
	Abnormal	(n=955) 4.3%	(n=1,277) 3.6%	0.469	6.9%	3.7%	0.114
Luteinizing Hormone (LH) (mIU/ml) (continuous) (discrete)		(n=2,232) r=0.165		<0.001	(n=131) $\bar{x}$ =4.11	(n=2,101) $\bar{x}$ =3.93	0.352
	Abnormal	(n=955) 0.3%	(n=1,277) 3.1%	<0.001	1.5%	1.9%	0.999
Follicle Stimulating Hormone (FSH) (mIU/ml) (continuous) (discrete)		(n=2,232) r=0.257		<0.001	(n=131) $\bar{x}$ =3.93	(n=2,101) $\bar{x}$ =4.39	0.070
	Abnormal	(n=955) 1.7%	(n=1,277) 6.3%	<0.001	2.3%	4.4%	0.343

Table N-1-1. (Continued)
Dependent Variable-Covariate Associations for the Endocrine Assessment

Dependent Variable	Level	Occupation				Personality Type		
		Officer	Enlisted Flyer	Enlisted Groundcrew	p-Value	Type A	Type B	p-Value
Past Thyroid Disease	Yes	(n=863) 6.0%	(n=364) 4.1%	(n=993) 5.5%	0.408	(n=948) 5.4%	(n=1,270) 5.6%	0.903
Composite Diabetes Indicator	Yes	(n=867) 13.0%	(n=364) 16.8%	(n=994) 14.8%	0.215	(n=949) 12.2%	(n=1,274) 16.1%	0.012
Diabetic Severity	No Treatment	(n=867) 7.0%	(n=365) 10.1%	(n=996) 9.1%	0.422	(n=950) 7.0%	(n=1,276) 9.6%	0.098
	Diet Only	2.5%	3.0%	2.9%		2.7%	2.8%	
	Oral Hypoglycemic	1.7%	1.9%	1.9%		1.6%	2.0%	
	Insulin Dependent	1.7%	1.6%	0.8%		1.0%	1.6%	
Time to Diabetes Onset (years) ^a		(n=867)	(n=365) $\beta=-0.111^b$	(n=995) $\beta=-0.049^b$	0.261	(n=950)	(n=1,275) $\beta=0.111^c$	0.027
Thyroid Gland	Abnormal	(n=839) 0.6%	(n=355) 0.6%	(n=979) 0.8%	0.810	(n=932) 0.8%	(n=1,239) 0.7%	0.975
Testicular Volume: Minimum (cm ³)		(n=857) $\bar{x}=15.67$	(n=363) $\bar{x}=15.85$	(n=987) $\bar{x}=16.16$	0.157	(n=940) $\bar{x}=16.01$	(n=1,265) $\bar{x}=15.86$	0.540
Testicular Volume: Total (cm ³)		(n=857) $\bar{x}=33.61$	(n=363) $\bar{x}=34.18$	(n=987) $\bar{x}=34.22$	0.435	(n=940) $\bar{x}=34.31$	(n=1,265) $\bar{x}=33.77$	0.251
Retinopathy Results (Diabetics)	Abnormal	(n=111) 3.6%	(n=61) 4.9%	(n=147) 3.4%	0.867	(n=114) 2.6%	(n=205) 4.4%	0.628
Neuropathy Results (Diabetics)	Abnormal	(n=113) 7.1%	(n=61) 13.1%	(n=147) 8.8%	0.413	(n=116) 6.9%	(n=205) 10.2%	0.422
Radial Pulses (Diabetics)	Abnormal	(n=113) 1.8%	(n=61) 0.0%	(n=147) 0.7%	0.465	(n=116) 0.9%	(n=205) 1.0%	0.999
Femoral Pulses (Diabetics)	Abnormal	(n=113) 3.5%	(n=61) 4.9%	(n=147) 2.0%	0.526	(n=116) 3.5%	(n=205) 2.9%	0.999
Popliteal Pulses (Diabetics)	Abnormal	(n=113) 5.3%	(n=61) 4.9%	(n=147) 2.7%	0.536	(n=116) 3.5%	(n=205) 4.4%	0.907

^aEstimated from a failure time analysis model, using the censored Weibull distribution.

^bEstimated coefficient relative to officers.

^cEstimated coefficient relative to Type B.

Table N-1-1. (Continued)
Dependent Variable-Covariate Associations for the Endocrine Assessment

Dependent Variable	Level	Occupation				Personality Type		
		Officer	Enlisted Flyer	Enlisted Groundcrew	p-Value	Type A	Type B	p-Value
Dorsalis Pedis Pulses (Diabetics)	Abnormal	(n=113) 15.0%	(n=61) 14.8%	(n=147) 13.6%	0.942	(n=116) 12.1%	(n=205) 15.6%	0.481
Posterior Tibial Pulses (Diabetics)	Abnormal	(n=113) 8.9%	(n=61) 8.2%	(n=147) 6.1%	0.690	(n=116) 6.9%	(n=205) 7.8%	0.939
Leg Pulses (Diabetics)	Abnormal	(n=113) 15.0%	(n=61) 16.4%	(n=147) 15.7%	0.972	(n=116) 14.7%	(n=205) 16.1%	0.855
Peripheral Pulses (Diabetics)	Abnormal	(n=113) 16.8%	(n=61) 16.4%	(n=147) 15.7%	0.967	(n=116) 14.7%	(n=205) 17.1%	0.684
Thyroid Stimulating Hormone (TSH) (μ IU/ml) (continuous) (discrete)	Abnormal High	(n=837) $\bar{x}$ =1.68 3.0%	(n=356) $\bar{x}$ =1.49 1.7%	(n=976) $\bar{x}$ =1.56 2.1%	0.003 0.280	(n=931) $\bar{x}$ =1.57 2.8%	(n=1,236) $\bar{x}$ =1.61 2.0%	0.406 0.304
Thyroxine (T ₄) (μ g/dl) (continuous) (discrete)	Abnormal Low	(n=837) $\bar{x}$ =7.57 1.2%	(n=356) $\bar{x}$ =7.96 0.3%	(n=976) $\bar{x}$ =7.98 0.3%	<0.001 0.040	(n=931) $\bar{x}$ =7.79 0.6%	(n=1,236) $\bar{x}$ =7.83 0.7%	0.427 0.999
Anti-Thyroid Antibodies	Abnormal	(n=837) 3.4%	(n=356) 2.8%	(n=976) 2.9%	0.808	(n=931) 3.4%	(n=1,236) 2.8%	0.427
Fasting Glucose (mg/dl) (All Participants) (continuous) (discrete)	Abnormal High	(n=867) $\bar{x}$ =104.48 12.8%	(n=364) $\bar{x}$ =105.87 14.6%	(n=996) $\bar{x}$ =103.62 13.1%	0.203 0.695	(n=950) $\bar{x}$ =103.43 11.4%	(n=1,275) $\bar{x}$ =105.00 14.6%	0.078 0.031
Fasting Glucose (mg/dl) (Diabetics) (continuous) (discrete)	Abnormal High	(n=113) $\bar{x}$ =144.68 71.7%	(n=61) $\bar{x}$ =143.41 70.5%	(n=147) $\bar{x}$ =139.43 66.7%	0.674 0.665	(n=116) $\bar{x}$ =145.53 69.8%	(n=205) $\bar{x}$ =140.06 68.8%	0.340 0.945
Fasting Glucose (mg/dl) (Nondiabetics) (continuous) (discrete)	Abnormal High	(n=754) $\bar{x}$ =99.51 4.0%	(n=303) $\bar{x}$ =99.60 3.3%	(n=849) $\bar{x}$ =98.43 3.8%	0.021 0.872	(n=834) $\bar{x}$ =98.64 3.2%	(n=1,070) $\bar{x}$ =99.36 4.2%	0.068 0.328
2-Hour Postprandial Glucose (Nondiabetics) (mg/dl) (continuous) (discrete)	Impaired	(n=754) $\bar{x}$ =102.17 11.1%	(n=303) $\bar{x}$ =107.66 15.8%	(n=847) $\bar{x}$ =103.31 14.1%	0.018 0.075	(n=833) $\bar{x}$ =100.89 10.4%	(n=1,069) $\bar{x}$ =105.61 15.3%	<0.001 0.003

Table N-1-1. (Continued)
Dependent Variable-Covariate Associations for the Endocrine Assessment

Dependent Variable	Level	Occupation				Personality Type		
		Officer	Enlisted Flyer	Enlisted Groundcrew	p-Value	Type A	Type B	p-Value
Fasting Urinary Glucose (All Participants)	Present	(n=867) 2.7%	(n=363) 3.9%	(n=994) 3.1%	0.529	(n=949) 2.9%	(n=1,273) 3.2%	0.701
Fasting Urinary Glucose (Diabetics)	Present	(n=113) 20.4%	(n=61) 21.3%	(n=146) 21.2%	0.982	(n=116) 23.3%	(n=204) 19.6%	0.527
2-Hour Postprandial Urinary Glucose (Nondiabetics)	Present	(n=751) 14.3%	(n=303) 21.8%	(n=847) 20.9%	0.001	(n=833) 17.7%	(n=1,066) 19.0%	0.505
Serum Insulin (mIU/ml) (All Participants) (continuous)		(n=867) $\bar{x}=63.8$	(n=364) $\bar{x}=70.2$	(n=996) $\bar{x}=67.4$	0.190	(n=950) $\bar{x}=59.9$	(n=1,275) $\bar{x}=71.6$	<0.001
(discrete)	Abnormal Low	5.0%	3.9%	4.4%	0.241	5.4%	3.9%	<0.001
	Abnormal High	54.7%	61.8%	56.6%		51.9%	60.3%	
Serum Insulin (mIU/ml) (Diabetics) (continuous)		(n=113) $\bar{x}=68.4$	(n=61) $\bar{x}=49.5$	(n=147) $\bar{x}=52.9$	0.133	(n=116) $\bar{x}=50.9$	(n=205) $\bar{x}=61.1$	0.190
(discrete)	Abnormal Low	0.0%	3.3%	0.0%	0.003	0.0%	1.0%	0.030
	Abnormal High	68.1%	50.8%	52.4%		49.1%	62.4%	
Serum Insulin (mIU/ml) (Nondiabetics) (continuous)		(n=754) $\bar{x}=63.1$	(n=303) $\bar{x}=75.4$	(n=849) $\bar{x}=70.2$	0.003	(n=834) $\bar{x}=61.3$	(n=1,070) $\bar{x}=73.8$	<0.001
(discrete)	Abnormal Low	5.7%	4.0%	5.2%	0.018	6.1%	4.5%	0.003
	Abnormal High	52.7%	64.0%	57.4%		52.3%	59.9%	
Serum Glucagon (pg/ml) (All Participants) (continuous)		(n=745) $\bar{x}=56.0$	(n=331) $\bar{x}=55.7$	(n=855) $\bar{x}=57.0$	0.273	(n=816) $\bar{x}=56.0$	(n=1,113) $\bar{x}=56.7$	0.288
(discrete)	Abnormal	0.0%	0.0%	0.5%	0.080	0.1%	0.3%	0.846
Serum Glucagon (pg/ml) (Diabetics) (continuous)		(n=104) $\bar{x}=64.6$	(n=53) $\bar{x}=63.4$	(n=128) $\bar{x}=67.4$	0.430	(n=100) $\bar{x}=64.9$	(n=185) $\bar{x}=66.0$	0.665
(discrete)	Abnormal	0.0%	0.0%	3.1%	0.083	1.0%	1.6%	0.999
Serum Glucagon (pg/ml) (Nondiabetics) (continuous)		(n=641) $\bar{x}=54.7$	(n=278) $\bar{x}=54.4$	(n=727) $\bar{x}=55.3$	0.514	(n=716) $\bar{x}=54.8$	(n=928) $\bar{x}=55.0$	0.800

Table N-1-1. (Continued)
Dependent Variable-Covariate Associations for the Endocrine Assessment

Dependent Variable	Level	Occupation				Personality Type		
		Officer	Enlisted Flyer	Enlisted Groundcrew	p-Value	Type A	Type B	p-Value
α -1-C								
Hemoglobin (percent) (All Participants) (continuous) (discrete)	Abnormal	(n=867) $\bar{x}$ =7.07 23.2%	(n=364) $\bar{x}$ =7.32 33.2%	(n=996) $\bar{x}$ =7.18 27.1%	0.003 0.001	(n=950) $\bar{x}$ =7.12 24.6%	(n=1,275) $\bar{x}$ =7.19 28.0%	0.128 0.083
α -1-C								
Hemoglobin (percent) (Diabetics) (continuous) (discrete)	Abnormal	(n=113) $\bar{x}$ =8.90 77.0%	(n=61) $\bar{x}$ =9.19 80.3%	(n=147) $\bar{x}$ =9.03 77.6%	0.758 0.872	(n=116) $\bar{x}$ =9.12 80.2%	(n=205) $\bar{x}$ =8.96 76.6%	0.565 0.546
α -1-C								
Hemoglobin (percent) (Nondiabetics) (continuous) (discrete)	Abnormal	(n=754) $\bar{x}$ =6.83 15.1%	(n=303) $\bar{x}$ =6.99 23.8%	(n=849) $\bar{x}$ =6.90 18.4%	0.001 0.004	(n=834) $\bar{x}$ =6.88 16.9%	(n=1,070) $\bar{x}$ =6.90 18.7%	0.445 0.343
Urinary Protein (Diabetics)	Abnormal	(n=113) 12.4%	(n=61) 11.5%	(n=146) 16.4%	0.527	(n=116) 14.7%	(n=204) 13.7%	0.950
Serum Proinsulin (ng/ml) (Diabetics) (continuous) (discrete)								
	Abnormal	(n=109) $\bar{x}$ =0.87 40.4%	(n=58) $\bar{x}$ =0.65 41.4%	(n=140) $\bar{x}$ =0.74 43.6%	0.247 0.874	(n=110) $\bar{x}$ =0.62 45.5%	(n=197) $\bar{x}$ =0.86 40.1%	0.021 0.429
Serum C Peptide (ng/ml) (Diabetics) (continuous) (discrete)								
	Abnormal	(n=109) $\bar{x}$ =9.20 64.2%	(n=58) $\bar{x}$ =8.03 55.2%	(n=140) $\bar{x}$ =8.35 61.4%	0.469 0.520	(n=110) $\bar{x}$ =8.23 62.7%	(n=197) $\bar{x}$ =8.79 60.4%	0.483 0.781
Total								
Testosterone (ng/ml) (continuous) (discrete)	Abnormal	(n=857) $\bar{x}$ =489.8 4.7%	(n=361) $\bar{x}$ =505.5 4.7%	(n=989) $\bar{x}$ =514.5 5.5%	0.014 0.706	(n=939) $\bar{x}$ =511.2 4.5%	(n=1,266) $\bar{x}$ =497.6 5.5%	0.085 0.347
Free								
Testosterone (pg/ml) (continuous) (discrete)	Abnormal	(n=857) $\bar{x}$ =17.37 17.4%	(n=361) $\bar{x}$ =18.68 14.1%	(n=989) $\bar{x}$ =19.39 19.4%	<0.001 0.074	(n=939) $\bar{x}$ =18.97 15.4%	(n=1,266) $\bar{x}$ =18.12 19.5%	0.001 0.016
Sex Hormone Binding Globulin	Abnormal	(n=857) 18.8%	(n=361) 15.2%	(n=989) 17.2%	0.312	(n=939) 15.4%	(n=1,266) 19.0%	0.036

Table N-1-1. (Continued)
Dependent Variable-Covariate Associations for the Endocrine Assessment

Dependent Variable	Level	Occupation				Personality Type		
		Officer	Enlisted Flyer	Enlisted Groundcrew	p-Value	Type A	Type B	p-Value
Total Testosterone to Sex Hormone Binding Globulin Ratio	Abnormal	(n=857) 10.7%	(n=361) 11.1%	(n=989) 8.7%	0.241	(n=939) 10.3%	(n=1,266) 9.5%	0.554
Estradiol (pg/ml)		(n=869) $\bar{x}$ =31.45	(n=364) $\bar{x}$ =32.13	(n=999) $\bar{x}$ =32.81	0.085	--	--	--
(continuous)								
(discrete)		3.5%	5.0%	3.9%	0.466	--	--	--
Luteinizing Hormone (LH)		(n=869) $\bar{x}$ =3.99	(n=364) $\bar{x}$ =3.98	(n=999) $\bar{x}$ =3.88	0.476	--	--	--
(mIU/ml)								
(continuous)								
(discrete)	Abnormal	2.2%	2.2%	1.5%	0.493	--	--	--
Follicle Stimulating Hormone (FSH)		(n=869) $\bar{x}$ =4.59	(n=364) $\bar{x}$ =4.44	(n=999) $\bar{x}$ =4.15	0.005	--	--	--
(mIU/ml)								
(continuous)								
(discrete)	Abnormal	5.3%	5.5%	3.0%	0.024	--	--	--

Table N-1-1. (Continued)
Dependent Variable-Covariate Associations for the Endocrine Assessment

Dependent Variable	Level	Body Fat			Family History of Diabetes		
		Obese >25%	Lean or Normal ≤25%	p-Value	Yes	No	p-Value
Composite Diabetes Indicator	Yes	(n=567) 26.1%	(n=1,658) 10.4%	<0.001	(n=521) 21.9%	(n=1,668) 12.0%	<0.001
Diabetic Severity		(n=568)	(n=1,660)		(n=521)	(n=1,671)	
	No Treatment	15.9%	6.0%	<0.001	10.9%	7.5%	<0.001
	Diet Only	4.8%	2.1%		4.8%	2.2%	
	Oral Hypoglycemic	3.9%	1.1%		3.8%	1.3%	
	Insulin Dependent	1.6%	1.2%		2.3%	1.0%	
Time to Diabetes Onset (years) ^a		(n=2,227) $\beta=-0.035$		<0.001	(n=521) $\beta=-0.283^b$	(n=1,670)	<0.001
Testicular Volume: Minimum (cm ³)		(n=2,207) $r=0.034$		0.105	--	--	--
Testicular Volume: Total (cm ³)		(n=2,207) $r=0.037$		0.080	--	--	--
Retinopathy Results (Diabetics)	Abnormal	(n=148) 2.0%	(n=171) 5.3%	0.223	(n=113) 7.1%	(n=199) 1.5%	0.025
Neuropathy Results (Diabetics)	Abnormal	(n=148) 6.8%	(n=173) 11.0%	0.262	(n=114) 7.9%	(n=200) 9.5%	0.784
Radial Pulses (Diabetics)	Abnormal	(n=148) 0.7%	(n=173) 1.2%	0.999	(n=114) 0.9%	(n=200) 1.0%	0.999
Femoral Pulses (Diabetics)	Abnormal	(n=148) 3.4%	(n=173) 2.9%	0.999	(n=114) 2.6%	(n=200) 3.5%	0.930
Popliteal Pulses (Diabetics)	Abnormal	(n=148) 4.1%	(n=173) 4.1%	0.999	(n=114) 3.5%	(n=200) 4.5%	0.897
Dorsalis Pedis Pulses (Diabetics)	Abnormal	(n=148) 11.5%	(n=173) 16.8%	0.236	(n=114) 14.0%	(n=200) 14.0%	0.999
Posterior Tibial Pulses (Diabetics)	Abnormal	(n=148) 4.7%	(n=173) 9.8%	0.129	(n=114) 7.9%	(n=200) 7.5%	0.999
Leg Pulses (Diabetics)	Abnormal	(n=148) 12.2%	(n=173) 18.5%	0.160	(n=114) 16.7%	(n=200) 14.5%	0.726
Peripheral Pulses (Diabetics)	Abnormal	(n=148) 12.2%	(n=173) 19.7%	0.096	(n=114) 16.7%	(n=200) 15.5%	0.911
Fasting Glucose (mg/dl)							
(All Participants)		(n=568)	(n=1,659)		(n=521)	(n=1,670)	
(continuous)		$r=0.209$		<0.001	$\bar{x}=108.12$	$\bar{x}=103.21$	<0.001
(discrete)	Abnormal High	23.1%	9.8%	<0.001	18.2%	11.6%	<0.001

^aEstimated from a failure time analysis model, using the censored Weibull distribution.

^bEstimated coefficient relative to no family history of diabetes.

Table N-1-1. (Continued)
Dependent Variable-Covariate Associations for the Endocrine Assessment

Dependent Variable	Level	Body Fat			Family History of Diabetes		
		Obese >25%	Lean or Normal ≤25%	p-Value	Yes	No	p-Value
Fasting Glucose (mg/dl) (Diabetics) (continuous) (discrete)	Abnormal High	(n=148) 73.7%	(n=173) 65.3%	 r=0.048 0.395 0.136	(n=114) x̄=145.48 66.7%	(n=200) x̄=140.37 70.5%	 0.377 0.562
Fasting Glucose (mg/dl) (Nondiabetics) (continuous) (discrete)	Abnormal High	(n=420) 5.2%	(n=1,486) 3.4%	 r=0.165 <0.001 0.102	(n=407) x̄=99.49 4.7%	(n=1,470) x̄=98.98 3.5%	 0.287 0.367
2-Hour Postprandial Glucose (Nondiabetics) (mg/dl) (continuous) (discrete)	Impaired	(n=419) 23.2%	(n=1,485) 10.4%	 r=0.265 <0.001 <0.001	(n=407) x̄=108.53 17.0%	(n=1,468) x̄=102.46 12.1%	 <0.001 0.014
Fasting Urinary Glucose (All Participants) Present	Present	(n=566) 6.0%	(n=1,658) 2.1%	<0.001	(n=520) 4.8%	(n=1,668) 2.5%	0.010
Fasting Urinary Glucose (Diabetics) Present	Present	(n=147) 22.5%	(n=173) 19.7%	0.635	(n=114) 21.9%	(n=199) 20.1%	0.811
2-Hour Postprandial Urinary Glucose (Nondiabetics) Present	Present	(n=418) 20.3%	(n=1,483) 17.9%	0.281	(n=407) 19.4%	(n=1,466) 18.1%	0.587
Serum Insulin (mIU/ml) (All Participants) (continuous) (discrete)	Abnormal Low Abnormal High	(n=2,227) r=0.347 (n=568) 1.2% 74.3%	(n=1,659) (n=1,659) 5.7% 50.7%	<0.001 <0.001	(n=521) x̄=69.0 3.1% 60.5%	(n=1,670) x̄=65.8 5.0% 55.8%	0.310 0.065
Serum Insulin (mIU/ml) (Diabetics) (continuous) (discrete)	Abnormal Low Abnormal High	(n=321) r=0.223 (n=148) 0.0% 65.5%	(n=173) (n=173) 1.2% 50.9%	<0.001 0.017	(n=114) x̄=47.1 0.9% 51.8%	(n=200) x̄=64.1 0.5% 61.5%	0.030 0.236

Table N-1-1. (Continued)
Dependent Variable-Covariate Associations for the Endocrine Assessment

Dependent Variable	Level	Body Fat			Family History of Diabetes		
		Obese >25%	Lean or Normal ≤25%	p-Value	Yes	No	p-Value
Serum Insulin (mIU/ml) (Nondiabetics) (continuous) (discrete)		(n=1,906) r=0.415		<0.001	(n=407) x̄=76.8	(n=1,470) x̄=66.1	0.002
	Abnormal Low	(n=420) 1.7%	(n=1,486) 6.2%	<0.001	3.7%	5.6%	0.013
	Abnormal High	77.4%	50.7%		62.9%	55.0%	
Serum Glucagon (pg/ml) (All Participants) (continuous) (discrete)		(n=1,931) r=0.095		<0.001	(n=458) x̄=57.1	(n=1,442) x̄=56.1	0.227
	Abnormal	(n=500) 0.6%	(n=1,431) 0.1%	0.094	0.4%	0.1%	0.531
Serum Glucagon (pg/ml) (Diabetics) (continuous) (discrete)		(n=285) r=0.104		0.080	(n=103) x̄=68.5	(n=175) x̄=64.2	0.105
	Abnormal	(n=131) 2.3%	(n=154) 0.7%	0.504	1.9%	1.1%	0.985
Serum Glucagon (pg/ml) (Nondiabetics) (continuous)		(n=1,646) r=0.027		0.267	(n=355) x̄=54.1	(n=1,267) x̄=55.1	0.212
α-1-C Hemoglobin (percent) (All Participants) (continuous) (discrete)		(n=2,227) r=0.163		<0.001	(n=521) x̄=7.46	(n=1,670) x̄=7.07	<0.001
	Abnormal	(n=568) 38.9%	(n=1,659) 22.4%	<0.001	35.1%	24.2%	<0.001
α-1-C Hemoglobin (percent) (Diabetics) (continuous) (discrete)		(n=321) r=0.011		0.846	(n=114) x̄=9.44	(n=200) x̄=8.79	0.025
	Abnormal	(n=148) 84.5%	(n=173) 72.3%	0.013	81.6%	76.5%	0.364
α-1-C Hemoglobin (percent) (Nondiabetics) (continuous) (discrete)		(n=1,906) r=0.078		0.001	(n=407) x̄=6.98	(n=1,470) x̄=6.87	0.001
	Abnormal	(n=420) 22.9%	(n=1,486) 16.6%	0.004	22.1%	17.1%	0.024
Urinary Protein (Diabetics) (discrete)	Abnormal	(n=147) 15.0%	(n=173) 13.3%	0.789	(n=114) 15.8%	(n=199) 13.1%	0.618

Table N-1-1. (Continued)
Dependent Variable-Covariate Associations for the Endocrine Assessment

Dependent Variable	Level	Body Fat			Family History of Diabetes		
		Obese >25%	Lean or Normal ≤25%	p-Value	Yes	No	p-Value
Serum Proinsulin (ng/ml) (Diabetics) (continuous) (discrete)		(n=307) r=0.249 (n=140)	(n=167)	<0.001	(n=112) $\bar{x}$ =0.760	(n=189) $\bar{x}$ =0.776	0.885
	Abnormal	49.3%	35.9%	0.025	45.5%	40.7%	0.488
Serum C Peptide (ng/ml) (Diabetics) (continuous) (discrete)		(n=307) r=0.195 (n=140)	(n=167)	0.001	(n=112) $\bar{x}$ =7.31	(n=189) $\bar{x}$ =9.35	0.010
	Abnormal	67.1%	56.3%	0.068	54.5%	65.6%	0.072
Total Testosterone (ng/ml) (continuous) (discrete)		(n=2,207) r=-0.347 (n=565)	(n=1,642)	<0.001	--	--	--
	Abnormal	12.0%	2.6%	<0.001	--	--	--
Free Testosterone (pg/ml) (continuous) (discrete)		(n=2,207) r=-0.236 (n=565)	(n=1,642)	<0.001	--	--	--
	Abnormal	27.1%	14.6%	<0.001	--	--	--
Sex Hormone Binding Globulin	Abnormal	(n=565) 19.3%	(n=1,642) 16.9%	0.214	--	--	--
Total Testosterone to Sex Hormone Binding Globulin Ratio	Abnormal	(n=565) 10.8%	(n=1,642) 9.6%	0.443	--	--	--

Table N-1-1. (Continued)
Dependent Variable-Covariate Associations for the Endocrine Assessment

Dependent Variable	Level	Diabetic Severity				p-Value
		No Treatment	Diet Only	Oral Hypoglycemic	Insulin Dependent	
Retinopathy Results (Diabetics)	Abnormal	(n=189) 0.5%	(n=61) 3.3%	(n=41) 7.3%	(n=28) 21.4%	<0.001
Neuropathy Results (Diabetics)	Abnormal	(n=189) 3.7%	(n=62) 3.2%	(n=41) 17.1%	(n=29) 44.8%	<0.001
Radial Pulses (Diabetics)	Abnormal	(n=189) 0.5%	(n=62) 1.6%	(n=41) 2.4%	(n=29) 0.0%	0.589
Femoral Pulses (Diabetics)	Abnormal	(n=189) 2.7%	(n=62) 3.2%	(n=41) 0.0%	(n=29) 10.3%	0.090
Popliteal Pulses (Diabetics)	Abnormal	(n=189) 2.7%	(n=62) 3.2%	(n=41) 2.4%	(n=29) 17.2%	0.002
Dorsalis Pedis Pulses (Diabetics)	Abnormal	(n=189) 11.6%	(n=62) 12.9%	(n=41) 17.1%	(n=29) 31.0%	0.045
Posterior Tibial Pulses (Diabetics)	Abnormal	(n=189) 6.9%	(n=62) 3.2%	(n=41) 7.3%	(n=29) 20.7%	0.029
Leg Pulses (Diabetics)	Abnormal	(n=189) 13.2%	(n=62) 12.9%	(n=41) 19.5%	(n=29) 31.0%	0.076
Peripheral Pulses (Diabetics)	Abnormal	(n=189) 13.8%	(n=62) 12.9%	(n=41) 22.0%	(n=29) 31.0%	0.071
Fasting Glucose (mg/dl) (Diabetics) (continuous)	Abnormal High	(n=189) $\bar{x}=130.64$	(n=62) $\bar{x}=141.57$	(n=41) $\bar{x}=187.22$	(n=29) $\bar{x}=166.60$	<0.001
(discrete)		64.6%	61.3%	92.7%	82.8%	0.001
Fasting Urinary Glucose (Diabetics)	Present	(n=188) 11.7%	(n=62) 21.0%	(n=41) 43.9%	(n=29) 48.3%	<0.001
Serum Insulin (mIU/ml) (Diabetics) (continuous)	Abnormal Low	(n=189) $\bar{x}=81.70$	(n=62) $\bar{x}=38.83$	(n=41) $\bar{x}=23.38$	(n=29) $\bar{x}=45.30$	<0.001
(discrete)		1.1%	0.0%	0.0%	0.0%	<0.001
	Abnormal High	68.3%	45.2%	26.8%	58.6%	

Table N-1-1. (Continued)
Dependent Variable-Covariate Associations for the Endocrine Assessment

Dependent Variable	Level	Diabetic Severity				p-Value
		No Treatment	Diet Only	Oral Hypoglycemic	Insulin Dependent	
Serum Glucagon (pg/ml)						
(Diabetics)		(n=165)	(n=54)	(n=41)	(n=25)	
(continuous)		$\bar{x}=61.6$	$\bar{x}=67.0$	$\bar{x}=75.4$	$\bar{x}=75.3$	<0.001
(discrete)	Abnormal	1.2%	0.0%	2.4%	4.0%	0.503
α -1-C Hemoglobin (percent)						
(Diabetics)		(n=189)	(n=62)	(n=41)	(n=29)	
(continuous)		$\bar{x}=8.41$	$\bar{x}=8.79$	$\bar{x}=11.00$	$\bar{x}=11.37$	<0.001
(discrete)	Abnormal	72.0%	71.0%	100.0%	100.0%	<0.001
Urinary Protein (Diabetics)	Abnormal	(n=188) 10.1%	(n=62) 11.3%	(n=41) 24.4%	(n=29) 31.0%	0.004
Serum Proinsulin (ng/ml)						
(Diabetics)		(n=175)	(n=62)	(n=41)	(n=29)	
(continuous)		$\bar{x}=0.930$	$\bar{x}=0.531$	$\bar{x}=0.651$	$\bar{x}=0.579$	0.004
(discrete)	Abnormal	24.0%	58.1%	82.9%	58.6%	<0.001
Serum C Peptide (ng/ml)						
(Diabetics)		(n=175)	(n=62)	(n=41)	(n=29)	
(continuous)		$\bar{x}=11.41$	$\bar{x}=6.70$	$\bar{x}=4.03$	$\bar{x}=2.10$	<0.001
(discrete)	Abnormal	78.3%	48.4%	41.5%	13.8%	<0.001

Table N-1-1. (Continued)
Dependent Variable-Covariate Associations for the Endocrine Assessment

Dependent Variable	Level	Family History of Heart Disease			Current Cigarette Smoking (cigarettes/day)				
		No	Yes	p-Value	0-Never	0-Former	>0-20	>20	p-Value
Radial Pulses (Diabetics)	Abnormal	(n=139) 0.7%	(n=179) 1.1%	0.999	(n=73) 1.4%	(n=169) 1.2%	(n=47) 0.0%	(n=32) 0.0%	0.799
Femoral Pulses (Diabetics)	Abnormal	(n=139) 3.6%	(n=179) 2.8%	0.933	(n=73) 0.0%	(n=169) 1.2%	(n=47) 12.8%	(n=32) 6.3%	<0.001
Popliteal Pulses (Diabetics)	Abnormal	(n=139) 5.0%	(n=179) 3.4%	0.641	(n=73) 0.0%	(n=169) 1.2%	(n=47) 17.0%	(n=32) 9.4%	<0.001
Dorsalis Pedis Pulses (Diabetics)	Abnormal	(n=139) 18.7%	(n=179) 11.2%	0.083	(n=73) 6.9%	(n=169) 13.0%	(n=47) 27.7%	(n=32) 18.8%	0.012
Posterior Tibial Pulses (Diabetics)	Abnormal	(n=139) 10.1%	(n=179) 5.6%	0.198	(n=73) 0.0%	(n=169) 6.5%	(n=47) 19.2%	(n=32) 12.5%	0.001
Leg Pulses (Diabetics)	Abnormal	(n=139) 20.9%	(n=179) 11.7%	0.039	(n=73) 6.9%	(n=169) 14.2%	(n=47) 29.8%	(n=32) 21.9%	0.005
Peripheral Pulses (Diabetics)	Abnormal	(n=139) 20.9%	(n=179) 12.9%	0.078	(n=73) 8.2%	(n=169) 14.8%	(n=47) 29.8%	(n=32) 21.9%	0.013

Dependent Variable	Level	Lifetime Cigarette Smoking History (pack-years)				Cholesterol (mg/dl)			
		0	>0-10	>10	p-Value	0-200	200-239	>239	p-Value
Radial Pulses (Diabetics)	Abnormal	(n=73) 1.4%	(n=82) 0.0%	(n=166) 1.2%	0.590	(n=104) 1.9%	(n=113) 0.0%	(n=104) 1.0%	0.339
Femoral Pulses (Diabetics)	Abnormal	(n=73) 0.0%	(n=82) 3.7%	(n=166) 4.2%	0.213	(n=104) 2.9%	(n=113) 3.5%	(n=104) 2.9%	0.949
Popliteal Pulses (Diabetics)	Abnormal	(n=73) 0.0%	(n=82) 4.9%	(n=166) 5.4%	0.133	(n=104) 2.9%	(n=113) 5.3%	(n=104) 3.9%	0.658
Dorsalis Pedis Pulses (Diabetics)	Abnormal	(n=73) 6.9%	(n=82) 9.8%	(n=166) 19.9%	0.012	(n=104) 16.4%	(n=113) 10.6%	(n=104) 16.4%	0.376

Table N-1-1. (Continued)
Dependent Variable-Covariate Associations for the Endocrine Assessment

Dependent Variable	Level	Lifetime Cigarette Smoking History (pack-years)				Cholesterol (mg/dl)			
		0	>0-10	>10	p-Value	0-200	200-239	>239	p-Value
Posterior Tibial Pulses (Diabetics)	Abnormal	(n=73) 0.0%	(n=82) 6.1%	(n=166) 11.5%	0.007	(n=104) 6.7%	(n=113) 8.0%	(n=104) 7.7%	0.937
Leg Pulses (Diabetics)	Abnormal	(n=73) 6.9%	(n=82) 11.0%	(n=166) 21.7%	0.006	(n=104) 17.3%	(n=113) 11.5%	(n=104) 18.3%	0.327
Peripheral Pulses (Diabetics)	Abnormal	(n=73) 8.2%	(n=82) 11.0%	(n=166) 22.3%	0.008	(n=104) 18.3%	(n=113) 11.5%	(n=104) 19.2%	0.238

Dependent Variable	Level	HDL Cholesterol (mg/dl)			Lifetime Alcohol History (drink-years)			
		>35	0-35	p-Value	0	>0-40	>40	p-Value
Radial Pulses (Diabetics)	Abnormal	(n=187) 1.1%	(n=121) 0.8%	0.999	(n=24) 0.0%	(n=190) 1.1%	(n=101) 0.0%	0.516
Femoral Pulses (Diabetics)	Abnormal	(n=187) 2.7%	(n=121) 4.1%	0.707	(n=24) 0.0%	(n=190) 2.1%	(n=101) 5.0%	0.261
Popliteal Pulses (Diabetics)	Abnormal	(n=187) 2.7%	(n=121) 6.6%	0.165	(n=24) 0.0%	(n=190) 4.2%	(n=101) 4.0%	0.594
Dorsalis Pedis Pulses (Diabetics)	Abnormal	(n=187) 13.4%	(n=121) 16.5%	0.547	(n=24) 4.2%	(n=190) 12.1%	(n=101) 20.8%	0.044
Posterior Tibial Pulses (Diabetics)	Abnormal	(n=187) 7.0%	(n=121) 9.1%	0.641	(n=24) 4.2%	(n=190) 5.8%	(n=101) 9.9%	0.362
Leg Pulses (Diabetics)	Abnormal	(n=187) 15.5%	(n=121) 16.5%	0.936	(n=24) 4.2%	(n=190) 12.6%	(n=101) 22.8%	0.021
Peripheral Pulses (Diabetics)	Abnormal	(n=187) 16.6%	(n=121) 16.5%	0.999	(n=24) 4.2%	(n=190) 13.7%	(n=101) 22.8%	0.034

APPENDIX N-2.

Interaction Tables for the Endocrine Assessment

This appendix contains exposure analyses results of interactions between covariates and group or dioxin. Results are presented for separate strata of the covariate and include sample sizes, percent abnormal, relative risks, confidence intervals, and p-values for discrete dependent variables. Sample sizes, adjusted means, differences of adjusted means and confidence intervals or adjusted slopes and standard errors, and p-values are given for continuous dependent variables. Means are transformed back to the original scale, if necessary. Chapter 7, Statistical Methods, provides further details on the analytical approaches used in the interaction analyses. The covariate involved in the interaction and a reference to the analysis table in Chapter 18 are given in the heading of each subtable. A summary of the interactions described in this appendix follows.

Appendix N-2 Table	Chapter 18 Table	Dependent Variable	Model	Covariate
N-2-1	18-3	Past Thyroid Disease	1 3 4	Personality Type Personality Type Personality Type
N-2-2	18-4	Composite Diabetes Indicator	2 3	Occupation Occupation
N-2-3	18-5	Diabetic Severity	4 5 6	Occupation Occupation Age
N-2-4	18-8	Testicular Volume: Minimum	2 6	Occupation Occupation
N-2-5	18-9	Testicular Volume: Total	2	Occupation
N-2-6	18-10	Retinopathy Results (Diabetics)	1	Personality Type
N-2-7	18-15	Dorsalis Pedis Pulses (Doppler) (Diabetics)	5 6	Lifetime Cigarette Smoking History Lifetime Cigarette Smoking History
N-2-8	18-17	Leg Pulses (Doppler) (Diabetics)	5	Lifetime Cigarette Smoking History
N-2-9	18-18	Peripheral Pulses (Doppler) (Diabetics)	4 6	Family History of Heart Disease Family History of Heart Disease
N-2-10	18-24	Fasting Glucose (All Participants) (Continuous)	2 3 5	Occupation Occupation Body Fat
N-2-11	18-26	Fasting Glucose (Diabetics) (Continuous)	1	Age

Appendix N-2 Table	Chapter 18 Table	Dependent Variable	Model	Covariate
N-2-12	18-27	Fasting Glucose (Diabetics) (Discrete)	3 4 5 6	Body Fat Body Fat Body Fat Body Fat
N-2-13	18-28	Fasting Glucose (Nondiabetics) (Continuous)	2 3	Occupation Occupation
N-2-14	18-30	2-Hour Postprandial Glucose (Nondiabetics) (Continuous)	1 3	Body Fat, Family History of Diabetes Body Fat, Family History of Diabetes
N-2-15	18-31	2-Hour Postprandial Glucose (Nondiabetics) (Discrete)	1 2 4 5 6	Body Fat Race Race Race Race
N-2-16	18-32	Fasting Urinary Glucose (All Participants)	3 5 6	Personality Type, Body Fat Personality Type Personality Type
N-2-17	18-33	Fasting Urinary Glucose (Diabetics)	3	Body Fat
N-2-18	18-35	2-Hour Postprandial Urinary Glucose (Nondiabetics)	6	Occupation
N-2-19	18-36	Serum Insulin (All Participants) (Continuous)	1 3 6	Age, Body Fat Age Body Fat
N-2-20	18-37	Serum Insulin (All Participants) (Discrete)	1 3 4 5	Age, Body Fat Age, Occupation, Personality Type, Body Fat Body Fat Body Fat
N-2-21	18-39	Serum Insulin (Diabetics) (Discrete)	2 3 4 5 6	Age, Occupation, Body Fat Age Body Fat Body Fat Body Fat
N-2-22	18-40	Serum Insulin (Nondiabetics) (Continuous)	1 3	Body Fat Age
N-2-23	18-41	Serum Insulin (Nondiabetics) (Discrete)	1 2 3 6	Age, Body Fat Occupation Occupation Age

Appendix N-2 Table	Chapter 18 Table	Dependent Variable	Model	Covariate
N-2-24	18-42	Serum Glucagon (All Participants) (Continuous)	2 3 4	Occupation Family History of Diabetes Family History of Diabetes
N-2-25	18-44	Serum Glucagon (Diabetics) (Continuous)	1 3	Body Fat, Diabetic Severity Body Fat, Diabetic Severity
N-2-26	18-48	α -1-C Hemoglobin (All Participants) (Continuous)	2 3 4 5 6	Occupation Body Fat Body Fat Age, Body Fat Age, Body Fat
N-2-27	18-49	α -1-C Hemoglobin (All Participants) (Discrete)	2 5 6	Occupation Body Fat Body Fat
N-2-28	18-50	α -1-C Hemoglobin (Diabetics) (Continuous)	1	Age
N-2-29	18-52	α -1-C Hemoglobin (Nondiabetics) (Continuous)	1 4	Body Fat Race
N-2-30	18-54	Urinary Protein (Diabetics)	1	Race
N-2-31	18-56	Serum Proinsulin (Diabetics) (Discrete)	4 5 6	Occupation Occupation Occupation, Diabetic Severity
N-2-32	18-57	Serum C Peptide (Diabetics) (Continuous)	3	Occupation
N-2-33	18-58	Serum C Peptide (Diabetics) (Discrete)	3 5 6	Age Age, Diabetic Severity Age, Diabetic Severity
N-2-34	18-59	Total Testosterone (Continuous)	1 2 4 5 6	Age Personality Type Occupation Occupation Occupation
N-2-35	18-60	Total Testosterone (Discrete)	1 2 3 4	Race, Personality Type Occupation Personality Type Occupation
N-2-36	18-66	Estradiol	4 5 6	Occupation Occupation Occupation

Table N-2-1.
Interaction Table for Past Thyroid Disease

a) MODEL 1: RANCH HANDS VS. COMPARISONS — ADJUSTED (Group-by-Personality Type: Table 18-3)						
Stratum	Occupational Category	Group	n	Percent Yes	Adj. Relative Risk (95% C.I.)	p-Value
Type A	All	Ranch Hand	415	6.5	1.44 (0.82,2.54)	0.206
		Comparison	533	4.5		
Type B	All	Ranch Hand	529	4.4	0.65 (0.39,1.08)	0.097
		Comparison	741	6.5		
Type A	Officer	Ranch Hand	183	7.7	1.63 (0.81,3.29)	0.171
		Comparison	223	4.0		
	Enlisted Flyer	Ranch Hand	60	3.3	2.36 (0.76,7.35)	0.139
		Comparison	88	2.3		
	Enlisted Groundcrew	Ranch Hand	172	6.4	1.07 (0.52,2.22)	0.846
		Comparison	222	5.9		
Type B	Officer	Ranch Hand	181	5.0	0.75 (0.38,1.48)	0.409
		Comparison	276	7.3		
	Enlisted Flyer	Ranch Hand	100	6.0	1.08 (0.37,3.22)	0.884
		Comparison	115	4.4		
	Enlisted Groundcrew	Ranch Hand	248	3.2	0.49 (0.25,0.96)	0.038
		Comparison	350	6.6		

Table N-2-1. (Continued)
Interaction Table for Past Thyroid Disease

b) MODEL 3: RANCH HANDS AND COMPARISONS BY DIOXIN CATEGORY — ADJUSTED (Dioxin Category-by-Personality Type: Table 18-3)					
Stratum	Dioxin Category	n	Percent Yes	Adjusted Relative Risk (95% C.I.)^a	p-Value
Type A	Comparison	443	5.0		
	Background RH	172	10.5	2.26 (1.16,4.37)	0.016
	Low RH	115	4.3	0.68 (0.14,3.23)	0.627
	High RH	99	4.0	0.85 (0.20,3.68)	0.833
	Low plus High RH	214	4.2	0.75 (0.25,2.27)	0.612
Type B	Comparison	613	6.5		
	Background RH	199	3.5	0.53 (0.23,1.22)	0.136
	Low RH	142	4.2	0.63 (0.26,1.51)	0.298
	High RH	159	5.7	0.87 (0.41,1.84)	0.707
	Low plus High RH	301	5.0	0.75 (0.41,1.39)	0.358

c) MODEL 4: RANCH HANDS — CURRENT DIOXIN — ADJUSTED (Current Dioxin-by-Personality Type: Table 18-3)					
Current Dioxin Category Summary Statistics				Analysis Results for Log₂ (Current Dioxin + 1)	
Stratum	Current Dioxin	n	Percent Yes	Adjusted Relative Risk (95% C.I.)^b	p-Value
Type A	Low	158	3.2	1.22 (0.93,1.61)	0.157
	Medium	162	4.9		
	High	180	5.0		
Type B	Low	136	9.6	0.79 (0.58,1.07)	0.133
	Medium	134	7.5		
	High	116	3.5		

^a Relative risk and confidence interval relative to Comparisons.

^b Relative risk for a twofold increase in current dioxin.

Note: Model 3: RH = Ranch Hand.

Comparison: Current Dioxin ≤ 10 ppt.

Background (Ranch Hand): Current Dioxin ≤ 10 ppt.

Low (Ranch Hand): Current Dioxin > 10 ppt, 10 ppt < Initial Dioxin ≤ 143 ppt.

High (Ranch Hand): Current Dioxin > 10 ppt, Initial Dioxin > 143 ppt.

Model 4: Low = ≤ 8.1 ppt; Medium = >8.1-20.5 ppt; High = >20.5 ppt.

Table N-2-2.
Interaction Table for Composite Diabetes Indicator

a) MODEL 2: RANCH HANDS — INITIAL DIOXIN — ADJUSTED (Initial Dioxin-by-Occupation: Table 18-4)					
Initial Dioxin Category Summary Statistics				Analysis Results for Log₂ (Initial Dioxin)	
Stratum	Initial Dioxin	n	Percent Diabetic	Adjusted Relative Risk (95% C.I.)^a	p-Value
Officer	Low	76	18.4	2.79 (1.18,6.59)	0.020
	Medium	31	38.7		
	High	1	100.0		
Enlisted Flyer	Low	35	25.7	0.81 (0.52,1.27)	0.360
	Medium	42	14.3		
	High	30	26.7		
Enlisted Groundcrew	Low	60	13.3	1.27 (0.99,1.63)	0.065
	Medium	94	12.8		
	High	137	17.5		

b) MODEL 3: RANCH HANDS AND COMPARISONS BY DIOXIN CATEGORY — ADJUSTED (Dioxin Category-by-Occupation: Table 18-4)					
Stratum	Dioxin Category	n	Percent Diabetic	Adjusted Relative Risk (95% C.I.)^b	p-Value
Officer	Comparison	406	12.8		
	Background RH	232	10.3	0.97 (0.56,1.66)	0.900
	Low RH	99	24.2	1.65 (0.93,2.95)	0.090
	High RH	9	33.3	3.04 (0.67,13.79)	0.150
	Low plus High RH	108	25.0	1.75 (1.00,3.06)	0.050
Enlisted Flyer	Comparison	169	15.4		
	Background RH	40	2.5	0.19 (0.02,1.54)	0.121
	Low RH	54	22.2	1.80 (0.80,4.04)	0.157
	High RH	53	20.8	1.01 (0.43,2.36)	0.989
	Low plus High RH	107	21.5	1.35 (0.69,2.62)	0.380
Enlisted Groundcrew	Comparison	469	14.7		
	Background RH	95	14.7	1.44 (0.73,2.85)	0.297
	Low RH	99	12.1	0.59 (0.28,1.22)	0.155
	High RH	192	16.7	1.22 (0.75,1.99)	0.422
	Low plus High RH	291	15.1	0.97 (0.62,1.52)	0.910

^a Relative risk for a twofold increase in initial dioxin.

^b Relative risk and confidence interval relative to Comparisons.

Note: Model 2: Low = 39-98 ppt; Medium = > 98-232 ppt; High = > 232 ppt.

Model 3: RH = Ranch Hand.

Comparison: Current Dioxin ≤ 10 ppt.

Background (Ranch Hand): Current Dioxin ≤ 10 ppt.

Low (Ranch Hand): Current Dioxin > 10 ppt, 10 ppt < Initial Dioxin ≤ 143 ppt.

High (Ranch Hand): Current Dioxin > 10 ppt, Initial Dioxin > 143 ppt.

Table N-2-3.
Interaction Table for Diabetic Severity

a) MODEL 4: RANCH HANDS — CURRENT DIOXIN — ADJUSTED (Current Dioxin-by-Occupation: Table 18-5)										
Stratum	Current Dioxin Category Summary Statistics							Analysis Results for Log ₂ (Current Dioxin + 1)		
	Current Dioxin Category	n	Percent					Contrast vs. Non-Diabetic	Est. Relative Risk (95% C.I.) ^a	p-Value
			Non-Diabetic	No Treatment	Diet Only	Oral Hypoglycemic	Insulin Dependent			
Officer	Low	189	92.1	4.2	1.6	0.0	2.1	No Treatment	1.46 (0.80, 2.66)	0.217
	Medium	138	77.5	10.9	7.3	1.5	2.9	Diet Only	3.03 (1.25, 7.38)	0.015
	High	13	61.5	15.4	0.0	7.7	15.4	Oral Hypoglycemic	--	--
								Insulin Dependent	1.08 (0.44, 2.61)	0.870
Enlisted Flyer	Low	31	96.8	3.2	0.0	0.0	0.0	No Treatment	0.84 (0.51, 1.39)	0.501
	Medium	56	80.4	16.1	0.0	1.8	1.8	Diet Only	4.55 (1.28, 16.15)	0.019
	High	60	80.0	5.0	6.7	6.7	1.7	Oral Hypoglycemic	3.52 (1.33, 9.33)	0.011
								Insulin Dependent	1.60 (0.41, 6.30)	0.501
Enlisted Groundcrew	Low	70	85.7	8.6	1.4	0.0	4.3	No Treatment	1.03 (0.79, 1.35)	0.823
	Medium	100	87.0	7.0	5.0	1.0	0.0	Diet Only	1.26 (0.85, 1.87)	0.241
	High	217	83.9	8.8	3.2	3.7	0.5	Oral Hypoglycemic	3.66 (1.72, 7.76)	0.001
								Insulin Dependent	0.38 (0.16, 0.89)	0.025

Table N-2-3. (Continued)
Interaction Table for Diabetic Severity

b) MODEL 5: RANCH HANDS — CURRENT DIOXIN — ADJUSTED (Current Dioxin-by-Occupation: Table 18-5)										
Stratum	Current Dioxin Category Summary Statistics							Analysis Results for Log ₂ (Current Dioxin + 1)		
	Current Dioxin Category	n	Percent					Contrast vs. Non-Diabetic	Est. Relative Risk (95% C.I.) ^a	p-Value
			Non-Diabetic	No Treatment	Diet Only	Oral Hypoglycemic	Insulin Dependent			
Officer	Low	189	93.1	4.2	0.5	0.0	2.1	No Treatment	1.40 (0.86, 2.28)	0.176
	Medium	133	79.7	10.5	6.8	0.8	2.3	Diet Only	3.77 (1.82, 7.80)	<0.001
	High	18	38.9	16.7	16.7	11.1	16.7	Oral Hypoglycemic	--	--
								Insulin Dependent	1.03 (0.53, 1.97)	0.938
Enlisted Flyer	Low	33	97.0	3.0	0.0	0.0	0.0	No Treatment	0.89 (0.58, 1.37)	0.609
	Medium	55	80.0	14.6	1.8	1.8	1.8	Diet Only	3.18 (1.15, 8.84)	0.026
	High	59	79.7	6.8	5.1	6.8	1.7	Oral Hypoglycemic	3.19 (1.36, 7.49)	0.008
								Insulin Dependent	1.91 (0.53, 6.86)	0.323
Enlisted Groundcrew	Low	74	86.5	6.8	2.7	0.0	4.1	No Treatment	1.06 (0.83, 1.35)	0.624
	Medium	102	85.3	8.8	3.9	2.0	0.0	Diet Only	1.33 (0.93, 1.91)	0.124
	High	211	84.4	8.5	3.3	3.3	0.5	Oral Hypoglycemic	3.59 (1.82, 7.08)	<0.001
								Insulin Dependent	0.53 (0.32, 0.89)	0.015

Table N-2-3. (Continued)
Interaction Table for Diabetic Severity

c) MODEL 6: RANCH HANDS — CURRENT DIOXIN — ADJUSTED (Current Dioxin-by-Age: Table 18-5)										
Stratum	Current Dioxin Category Summary Statistics							Analysis Results for Log ₂ (Current Dioxin + 1)		
	Current Dioxin Category	n	Percent					Contrast vs. Non-Diabetic	Est. Relative Risk (95% C.I.) ^a	p-Value
			Non-Diabetic	No Treatment	Diet Only	Oral Hypoglycemic	Insulin Dependent			
Born ≥ 1942	Low	102	95.1	2.9	1.0	0.0	1.0	No Treatment	1.04 (0.78, 1.38)	0.810
	Medium	96	93.8	6.3	0.0	0.0	0.0	Diet Only	1.41 (0.95, 2.10)	0.092
	High	163	88.3	4.9	4.3	2.5	0.0	Oral Hypoglycemic	2.52 (1.21, 5.26)	0.014
								Insulin Dependent	--	--
Born < 1942	Low	194	90.2	5.7	1.0	0.0	3.1	No Treatment	1.23 (0.99, 1.52)	0.066
	Medium	194	75.8	12.9	7.2	2.1	2.1	Diet Only	1.47 (1.09, 1.99)	0.012
	High	125	70.4	13.6	4.8	7.2	4.0	Oral Hypoglycemic	2.71 (1.85, 3.96)	<0.001
								Insulin Dependent	0.95 (0.62, 1.45)	0.802

^a Relative risk for a twofold increase in current dioxin.

--: Relative risk, confidence interval, and p-value not presented due to the sparse number of abnormalities.

^c Adjusted for log₂ total lipids.

Note: Model 4: Low = ≤ 8.1 ppt; Medium = >8.1-20.5 ppt; High = >20.5 ppt.

Models 5 and 6: Low = ≤ 46 ppq; Medium = >46-128 ppq; High = >128 ppq.

Table N-2-4.
Interaction Table for Testicular Volume: Minimum (cm³)

a) MODEL 2: RANCH HANDS — INITIAL DIOXIN — ADJUSTED (Initial Dioxin-by-Occupation: Table 18-8)					
Initial Dioxin Category Summary Statistics				Analysis Results for Log₂ (Initial Dioxin)	
Stratum	Initial Dioxin	n	Adj. Mean	Adj. Slope (Std. Error)	p-Value
Officer	Low	76	14.83	1.9524 (0.9483)	0.040
	Medium	33	16.39		
	High	1	22.88		
Enlisted Flyer	Low	36	15.17	-0.9115 (0.5086)	0.074
	Medium	42	15.25		
	High	31	13.90		
Enlisted Groundcrew	Low	60	14.11	-0.4353 (0.2507)	0.083
	Medium	95	15.62		
	High	139	14.01		

b) MODEL 6: RANCH HANDS — CURRENT DIOXIN — ADJUSTED (Current Dioxin-by-Occupation: Table 18-8)					
Current Dioxin Category Summary Statistics				Analysis Results for Log₂ (Current Dioxin + 1)	
Stratum	Current Dioxin	n	Adj. Mean	Adj. Slope (Std. Error)	p-Value
Officer	Low	190	14.6	0.2570 (0.2799)	0.359
	Medium	133	15.4		
	High	19	16.2		
Enlisted Flyer	Low	32	15.5	-0.8563 (0.3426)	0.013
	Medium	56	15.7		
	High	60	14.2		
Enlisted Groundcrew	Low	74	15.3	-0.2721 (0.1625)	0.094
	Medium	103	14.5		
	High	213	14.6		

Note: Model 2: Low = 39-98 ppt; Medium = > 98-232 ppt; High = > 232 ppt.
 Model 6: Low = ≤ 46 ppq; Medium = > 46-128 ppq; High = > 128 ppq.

Table N-2-5.
Interaction Table for Testicular Volume: Total (cm³)

a) MODEL 2: RANCH HANDS — INITIAL DIOXIN — ADJUSTED (Initial Dioxin-by-Occupation: Table 18-9)					
Initial Dioxin Category Summary Statistics				Analysis Results for Log₂ (Initial Dioxin)	
Stratum	Initial Dioxin	n	Adj. Mean^a	Adj. Slope (Std. Error)^b	p-Value
Officer	Low	76	33.33	0.3189 (0.1597)	0.046
	Medium	33	35.74		
	High	1	51.42		
Enlisted Flyer	Low	36	33.65	-0.1763 (0.0857)	0.040
	Medium	42	31.74		
	High	31	30.42		
Enlisted Groundcrew	Low	60	30.70	-0.0741 (0.0421)	0.079
	Medium	95	33.19		
	High	139	30.26		

^a Transformed from square root scale.

^b Slope and standard error based on square root of total testicular volume versus log₂ (initial dioxin).

Note: Model 2: Low = 39-98 ppt; Medium = > 98-232 ppt; High = > 232 ppt.

Table N-2-6.
Interaction Table for Retinopathy Results (Diabetics)

a) MODEL 1: RANCH HANDS VS. COMPARISONS — ADJUSTED (Group-by-Personality Type: Table 18-10)						
Stratum	Occupational Category	Group	n	Percent Abnormal	Adj. Relative Risk (95% C.I.)	p-Value
<i>Type A</i>	<i>All</i>	<i>Ranch Hand</i>	48	0.0	--	--
		<i>Comparison</i>	64	3.1		
<i>Type B</i>	<i>All</i>	<i>Ranch Hand</i>	88	6.8	3.21 (0.61,16.90)	0.168
		<i>Comparison</i>	112	2.7		
<i>Type A</i>	<i>Officer</i>	<i>Ranch Hand</i>	22	0.0	--	--
		<i>Comparison</i>	20	5.0		
	<i>Enlisted Flyer</i>	<i>Ranch Hand</i>	7	0.0	--	--
		<i>Comparison</i>	11	0.0		
	<i>Enlisted Groundcrew</i>	<i>Ranch Hand</i>	19	0.0	--	--
		<i>Comparison</i>	33	3.0		
<i>Type B</i>	<i>Officer</i>	<i>Ranch Hand</i>	30	6.7	1.39 (0.12,16.74)	0.796
		<i>Comparison</i>	37	2.7		
	<i>Enlisted Flyer</i>	<i>Ranch Hand</i>	17	11.8	--	--
		<i>Comparison</i>	23	0.0		
	<i>Enlisted Groundcrew</i>	<i>Ranch Hand</i>	41	4.9	2.00 (0.17,23.74)	0.583
		<i>Comparison</i>	52	3.9		

--: Relative risk, confidence interval, and p-value not presented due to the sparse number of abnormalities.

Table N-2-7.
Interaction Table for Dorsalis Pedis Pulses (Doppler) (Diabetics)

a) MODEL 5: RANCH HANDS — CURRENT DIOXIN — ADJUSTED (Current Dioxin-by-Lifetime Cigarette Smoking History: Table 18-15)					
Current Dioxin Category Summary Statistics				Analysis Results for Log₂ (Current Dioxin + 1)	
Stratum	Current Dioxin	n	Percent Abnormal	Adjusted Relative Risk (95% C.I.)^a	p-Value
0 Pack-years	Low	8	0.0	2.33 (0.90,5.99)	0.081
	Medium	10	0.0		
	High	12	33.3		
>0-10 Pack-years	Low	6	16.7	1.54 (0.89,2.66)	0.121
	Medium	13	0.0		
	High	18	22.2		
>10 Pack-years	Low	11	36.4	1.03 (0.71,1.49)	0.869
	Medium	29	10.3		
	High	26	23.1		

b) MODEL 6: RANCH HANDS — CURRENT DIOXIN — ADJUSTED (Current Dioxin-by-Lifetime Cigarette Smoking History: Table 18-15)					
Current Dioxin Category Summary Statistics				Analysis Results for Log₂ (Current Dioxin + 1)	
Stratum	Current Dioxin	n	Percent Abnormal	Adjusted Relative Risk (95% C.I.)^a	p-Value
0 Pack-years	Low	8	0.0	2.25 (0.86,5.86)	0.098
	Medium	10	0.0		
	High	12	33.3		
>0-10 Pack-years	Low	6	16.7	1.47 (0.83,2.58)	0.183
	Medium	13	0.0		
	High	18	22.2		
>10 Pack-years	Low	11	36.4	1.00 (0.67,1.48)	0.981
	Medium	29	10.3		
	High	26	23.1		

^a Relative risk for a twofold increase in current dioxin.

Note: Models 5 and 6: Low = ≤ 46 ppq; Medium = > 46-128 ppq; High = > 128 ppq.

Table N-2-8.
Interaction Table for Leg Pulses (Doppler) (Diabetics)

a) MODEL 5: RANCH HANDS — CURRENT DIOXIN — ADJUSTED (Current Dioxin-by-Lifetime Cigarette Smoking History: Table 18-17)					
Current Dioxin Category Summary Statistics				Analysis Results for Log ₂ (Current Dioxin + 1)	
Stratum	Current Dioxin	n	Percent Abnormal	Adjusted Relative Risk (95% C.I.) ^a	p-Value
0 Pack-years	Low	8	0.0	1.92 (0.79,4.66)	0.150
	Medium	10	0.0		
	High	12	33.3		
>0-10 Pack-years	Low	6	16.7	1.37 (0.81,2.29)	0.238
	Medium	13	0.0		
	High	18	22.2		
>10 Pack-years	Low	11	36.4	0.97 (0.69,1.37)	0.862
	Medium	29	13.8		
	High	26	23.1		

^a Relative risk for a twofold increase in current dioxin.

Note: Model 5: Low = ≤ 46 ppq; Medium = > 46-128 ppq; High = > 128 ppq.

Table N-2-9.
Interaction Table for Peripheral Pulses (Doppler) (Diabetics)

a) MODEL 4: RANCH HANDS — CURRENT DIOXIN — ADJUSTED (Current Dioxin-by-Family History of Heart Disease: Table 18-18)					
Current Dioxin Category Summary Statistics				Analysis Results for Log₂ (Current Dioxin + 1)	
Stratum	Current Dioxin	n	Percent Abnormal	Adjusted Relative Risk (95% C.I.)^a	p-Value
No	Low	9	22.2	1.65 (1.06,2.59)	0.028
	Medium	24	4.2		
	High	28	42.9		
Yes	Low	18	22.2	0.65 (0.35,1.19)	0.159
	Medium	30	10.0		
	High	24	8.3		

b) MODEL 6: RANCH HANDS — CURRENT DIOXIN — ADJUSTED (Current Dioxin-by-Family History of Heart Disease: Table 18-18)					
Current Dioxin Category Summary Statistics				Analysis Results for Log₂ (Current Dioxin + 1)	
Stratum	Current Dioxin	n	Percent Abnormal	Adjusted Relative Risk (95% C.I.)^a	p-Value
No	Low	10	20.0	1.47 (0.98,2.20)	0.063
	Medium	21	9.5		
	High	30	36.7		
Yes	Low	15	26.7	0.76 (0.48,1.22)	0.261
	Medium	31	6.5		
	High	26	11.5		

^a Relative risk for a twofold increase in current dioxin.

Note: Model 4: Low = ≤ 8.1 ppt; Medium = >8.1-20.5 ppt; High = >20.5 ppt.

Model 6: Low = ≤ 46 ppq; Medium = > 46-128 ppq; High = > 128 ppq.

Table N-2-10.
Interaction Table for Fasting Glucose (mg/dl) (All Participants)
(Continuous)

a) MODEL 2: RANCH HANDS — INITIAL DIOXIN — ADJUSTED (Initial Dioxin-by-Occupation: Table 18-24)					
Initial Dioxin Category Summary Statistics				Analysis Results for Log₂ (Initial Dioxin)	
Stratum	Initial Dioxin	n	Adjusted Mean^a	Adjusted Slope (Std. Error)^b	p-Value
Officer	Low	76	113.14	0.0721 (0.0350)	0.040
	Medium	31	119.98		
	High	1	279.08		
Enlisted Flyer	Low	34	115.65	-0.0232 (0.0193)	0.229
	Medium	42	108.96		
	High	30	110.73		
Enlisted Groundcrew	Low	60	104.63	0.0322 (0.0093)	<0.001
	Medium	94	107.96		
	High	137	112.59		

b) MODEL 3: RANCH HANDS AND COMPARISONS BY DIOXIN CATEGORY — ADJUSTED (Dioxin Category-by-Occupation: Table 18-24)					
Stratum	Dioxin Category	n	Adjusted Mean^a	Difference of Adjusted Mean vs. Comparisons (95% C.I.)^c	p-Value^d
Officer	Comparison	406	100.14		
	Background RH	232	100.05	-0.09 --	0.952
	Low RH	99	103.01	2.86 --	0.184
	High RH	9	112.77	12.63 --	0.061
	Low plus High RH	108	103.79	3.65 --	0.082
Enlisted Flyer	Comparison	169	116.16		
	Background RH	40	109.37	-6.80 --	0.069
	Low RH	54	115.64	-0.52 --	0.879
	High RH	53	114.35	-1.81 --	0.597
	Low plus High RH	107	115.00	-1.16 --	0.664
Enlisted Groundcrew	Comparison	470	107.13		
	Background RH	96	109.97	2.83 --	0.221
	Low RH	99	102.36	-4.78 --	0.029
	High RH	192	110.17	3.03 --	0.084
	Low plus High RH	291	107.44	0.31 --	0.843

Table N-2-10. (Continued)
Interaction Table for Fasting Glucose (mg/dl) (All Participants)
(Continuous)

c) MODEL 5: RANCH HANDS — CURRENT DIOXIN — ADJUSTED (Current Dioxin-by-Body Fat: Table 18-24)					
Current Dioxin Category Summary Statistics				Analysis Results for Log ₂ (Current Dioxin + 1)	
Stratum	Current Dioxin	n	Adjusted Mean ^a	Adjusted Slope (Std. Error) ^b	p-Value
Obese: >25%	Low	37	102.94	0.0495 (0.0090)	<0.001
	Medium	80	106.30		
	High	104	117.32		
Lean or Normal: ≤25%	Low	259	101.36	0.0163 (0.0049)	<0.001
	Medium	210	103.16		
	High	184	108.64		

^a Transformed from natural logarithm scale.

^b Slope and standard error based on natural logarithm of fasting glucose versus log₂ dioxin.

^c Difference of means after transformation to original scale; confidence interval on difference of means not presented because analysis was performed on natural logarithm scale.

^d P-value is based on difference of means on natural logarithm scale.

Note: RH = Ranch Hand.

Model 2: Low = 39-98 ppt; Medium = > 98-232 ppt; High = > 232 ppt.

Model 3: Comparison: Current Dioxin ≤ 10 ppt.

Background (Ranch Hand): Current Dioxin ≤ 10 ppt.

Low (Ranch Hand): Current Dioxin > 10 ppt, 10 ppt < Initial Dioxin ≤ 143 ppt.

High (Ranch Hand): Current Dioxin > 10 ppt, Initial Dioxin > 143 ppt.

Model 5: Low = ≤ 46 ppq; Medium = > 46-128 ppq; High = > 128 ppq.

Table N-2-11.
Interaction Table for Fasting Glucose (mg/dl) (Diabetics)
(Continuous)

a) MODEL 1: RANCH HANDS VS. COMPARISONS — ADJUSTED (Group-by-Age: Table 18-26)						
Stratum	Occupational Category	Group	n	Adjusted Mean ^a	Difference of Adjusted Means (95% C.I.) ^b	p-Value ^c
Born ≥ 1942	All	Ranch Hand	31	163.72	18.85 --	0.099
		Comparison	45	144.87		
Born < 1942	All	Ranch Hand	106	155.08	-10.80 --	0.105
		Comparison	132	165.88		
Born ≥ 1942	Officer	Ranch Hand	3	196.57	56.94 --	0.168
		Comparison	4	139.63		
	Enlisted Flyer	Ranch Hand	4	156.43	25.13 --	0.395
		Comparison	6	131.30		
	Enlisted Groundcrew	Ranch Hand	24	162.78	13.73 --	0.297
		Comparison	35	149.05		
Born < 1942	Officer	Ranch Hand	50	167.04	-10.31 --	0.349
		Comparison	54	177.35		
	Enlisted Flyer	Ranch Hand	20	153.00	-11.91 --	0.425
		Comparison	28	164.91		
	Enlisted Groundcrew	Ranch Hand	36	145.32	-11.06 --	0.283
		Comparison	50	156.38		

^a Transformed from natural logarithm scale.

^b Difference of means after transformation to original scale; confidence interval on difference of means not presented because analysis was performed on natural logarithm scale.

^c P-value is based on difference of means on natural logarithm scale.

Table N-2-12.
Interaction Table for Fasting Glucose (Diabetics)
(Discrete)

a) MODEL 3: RANCH HANDS AND COMPARISONS BY DIOXIN CATEGORY — ADJUSTED (Dioxin Category-by-Body Fat: Table 18-27)					
Stratum	Dioxin Category	n	Percent Abnormal High	Adjusted Relative Risk (95% C.I.)^a	p-Value
Obese: >25%	Comparison	72	73.6		
	Background RH	9	77.8	1.30 (0.22,7.63)	0.769
	Low RH	22	72.7	0.80 (0.14,4.39)	0.793
	High RH	27	66.7	0.66 (0.08,5.15)	0.691
	Low plus High RH	49	69.4	0.73 (0.19,2.79)	0.645
Lean or Normal: ≤25%	Comparison	75	64.0		
	Background RH	30	60.0	1.08 (0.42,2.78)	0.878
	Low RH	26	65.4	0.85 (0.30,2.37)	0.752
	High RH	19	79.0	2.37 (0.62,9.05)	0.206
	Low plus High RH	45	71.1	1.25 (0.52,3.01)	0.623

b) MODEL 4: RANCH HANDS — CURRENT DIOXIN — ADJUSTED (Current Dioxin-by-Body Fat: Table 18-27)					
Current Dioxin Category Summary Statistics				Analysis Results for Log₂ (Current Dioxin + 1)	
Stratum	Current Dioxin	n	Percent Abnormal High	Adjusted Relative Risk (95% C.I.)^b	p-Value
Obese: >25%	Low	6	83.3	0.73 (0.46,1.16)	0.182
	Medium	22	77.3		
	High	32	65.6		
Lean or Normal: ≤25%	Low	22	59.1	1.31 (0.88,1.94)	0.185
	Medium	34	64.7		
	High	22	77.3		

Table N-2-12. (Continued)
Interaction Table for Fasting Glucose (Diabetics)
(Discrete)

c) MODEL 5: RANCH HANDS — CURRENT DIOXIN — ADJUSTED (Current Dioxin-by-Body Fat: Table 18-27)					
Current Dioxin Category Summary Statistics				Analysis Results for Log₂ (Current Dioxin + 1)	
Stratum	Current Dioxin	n	Percent Abnormal High	Adjusted Relative Risk (95% C.I.)^b	p-Value
Obese: >25%	Low	6	66.7	0.79 (0.54,1.16)	0.234
	Medium	23	82.6		
	High	31	64.5		
Lean or Normal: ≤25%	Low	20	55.0	1.37 (0.99,1.89)	0.060
	Medium	31	58.1		
	High	27	85.2		

d) MODEL 6: RANCH HANDS — CURRENT DIOXIN — ADJUSTED (Current Dioxin-by-Body Fat: Table 18-27)					
Current Dioxin Category Summary Statistics				Analysis Results for Log₂ (Current Dioxin + 1)	
Stratum	Current Dioxin	n	Percent Abnormal High	Adjusted Relative Risk (95% C.I.)^b	p-Value
Obese: >25%	Low	6	66.7	0.66 (0.42,1.02)	0.063
	Medium	23	82.6		
	High	31	64.5		
Lean or Normal: ≤25%	Low	20	55.0	1.22 (0.86,1.72)	0.267
	Medium	31	58.1		
	High	27	85.2		

^a Relative risk and confidence interval relative to Comparisons.

^b Relative risk for a twofold increase in current dioxin.

Note: Model 3: RH = Ranch Hand.

Comparison: Current Dioxin ≤ 10 ppt.

Background (Ranch Hand): Current Dioxin ≤ 10 ppt.

Low (Ranch Hand): Current Dioxin > 10 ppt, 10 ppt < Initial Dioxin ≤ 143 ppt.

High (Ranch Hand): Current Dioxin > 10 ppt, Initial Dioxin > 143 ppt.

Model 4: Low = ≤ 8.1 ppt; Medium = >8.1-20.5 ppt; High = >20.5 ppt.

Models 5 and 6: Low = ≤ 46 ppq; Medium = > 46-128 ppq; High = > 128 ppq.

Table N-2-13.
Interaction Table for Fasting Glucose (mg/dl) (Nondiabetics)
(Continuous)

a) MODEL 2: RANCH HANDS — INITIAL DIOXIN — ADJUSTED (Initial Dioxin-by-Occupation: Table 18-28)					
Initial Dioxin Category Summary Statistics				Analysis Results for Log₂ (Initial Dioxin)	
Stratum	Initial Dioxin	n	Adjusted Mean^a	Adjusted Slope (Std. Error)^b	p-Value
Officer	Low	62	103.05	-0.0436 (0.0171)	0.011
	Medium	19	98.78		
	High	0	—		
Enlisted Flyer	Low	25	99.94	-0.0099 (0.0089)	0.269
	Medium	36	98.44		
	High	22	99.02		
Enlisted Groundcrew	Low	52	97.79	0.0055 (0.0042)	0.188
	Medium	82	99.89		
	High	113	99.36		

Table N-2-13. (Continued)
Interaction Table for Fasting Glucose (mg/dl) (Nondiabetics)
(Continuous)

b) MODEL 3: RANCH HANDS AND COMPARISONS BY DIOXIN CATEGORY — ADJUSTED (Dioxin Category-by-Occupation: Table 18-28)					
Stratum	Dioxin Category	n	Adjusted Mean^a	Difference of Adjusted Mean vs. Comparisons (95% C.I.)^c	p-Value^d
Officer	Comparison	354	99.09		
	Background RH	208	99.49	0.39 --	0.590
	Low RH	75	100.47	1.38 --	0.200
	High RH	6	96.72	-2.38 --	0.485
	Low plus High RH	81	100.19	1.10 --	0.289
Enlisted Flyer	Comparison	143	100.55		
	Background RH	39	96.40	-4.15 --	0.006
	Low RH	41	99.25	-1.30 --	0.386
	High RH	42	97.43	-3.12 --	0.034
	Low plus High RH	83	98.33	-2.22 --	0.056
Enlisted Groundcrew	Comparison	400	98.96		
	Background RH	82	101.78	2.82 --	0.007
	Low RH	87	98.70	-0.26 --	0.791
	High RH	160	99.35	0.39 --	0.618
	Low plus High RH	247	99.13	0.16 --	0.812

^a Transformed from natural logarithm scale.

^b Slope and standard error based on natural logarithm of fasting glucose versus log₂ dioxin.

^c Difference of means after transformation to original scale; confidence interval on difference of means not presented because analysis was performed on natural logarithm scale.

^d P-value is based on difference of means on natural logarithm scale.

Note: Model 2: Low = 39-98 ppt; Medium = > 98-232 ppt; High = > 232 ppt.

Model 3: RH = Ranch Hand.

Comparison: Current Dioxin ≤ 10 ppt.

Background (Ranch Hand): Current Dioxin ≤ 10 ppt.

Low (Ranch Hand): Current Dioxin > 10 ppt, 10 ppt < Initial Dioxin ≤ 143 ppt.

High (Ranch Hand): Current Dioxin > 10 ppt, Initial Dioxin > 143 ppt.

Table N-2-14.
Interaction Table for 2-Hour Postprandial Glucose (mg/dl) (Nondiabetics)
(Continuous)

a) MODEL 1: RANCH HANDS VS. COMPARISONS — ADJUSTED (Group-by-Body Fat: Table 18-30)						
Stratum	Occupational Category	Group	n	Adjusted Mean ^a	Difference of Adjusted Means (95% C.I.) ^b	p-Value ^c
Obese: >25%	<i>All</i>	<i>Ranch Hand</i>	175	119.79	6.20 --	0.038
		<i>Comparison</i>	242	113.59		
Lean or Normal: ≤25%	<i>All</i>	<i>Ranch Hand</i>	618	102.10	-0.77 --	0.581
		<i>Comparison</i>	838	102.88		
Obese: >25%	Officer	Ranch Hand	59	115.84	6.87 --	0.159
		Comparison	89	108.79		
	Enlisted Flyer	Ranch Hand	28	120.56	6.96 --	0.358
		Comparison	37	113.60		
	Enlisted Groundcrew	Ranch Hand	88	121.77	5.39 --	0.215
		Comparison	116	116.38		
Lean or Normal: ≤25%	Officer	Ranch Hand	247	99.59	1.27 --	0.549
		Comparison	352	98.32		
	Enlisted Flyer	Ranch Hand	106	102.67	-5.22 --	0.146
		Comparison	126	107.89		
	Enlisted Groundcrew	Ranch Hand	265	103.06	-1.19 --	0.582
		Comparison	360	104.25		

Table N-2-14. (Continued)
Interaction Table for 2-Hour Postprandial Glucose (mg/dl) (Nondiabetics)
(Continuous)

b) MODEL 1: RANCH HANDS VS. COMPARISONS — ADJUSTED (Group-by-Family History of Diabetes: Table 18-30)						
Stratum	Occupational Category	Group	n	Adjusted Mean ^a	Difference of Adjusted Means (95% C.I.) ^b	p-Value ^c
No	All	Ranch Hand	626	104.19	2.29 --	0.097
		Comparison	840	101.90		
Yes	All	Ranch Hand	167	104.77	-5.10 --	0.063
		Comparison	240	109.86		
No	Officer	Ranch Hand	251	99.85	1.47 --	0.477
		Comparison	363	98.39		
	Enlisted Flyer	Ranch Hand	105	105.64	-1.48 --	0.683
		Comparison	118	107.12		
	Enlisted Groundcrew	Ranch Hand	270	106.57	4.35 --	0.041
		Comparison	359	102.21		
Yes	Officer	Ranch Hand	55	107.72	4.15 --	0.378
		Comparison	78	103.57		
	Enlisted Flyer	Ranch Hand	29	102.65	-7.37 --	0.250
		Comparison	45	110.02		
	Enlisted Groundcrew	Ranch Hand	83	103.30	-10.66 --	0.007
		Comparison	117	113.95		

Table N-2-14. (Continued)
Interaction Table for 2-Hour Postprandial Glucose (mg/dl) (Nondiabetics)
(Continuous)

c) MODEL 3: RANCH HANDS AND COMPARISONS BY DIOXIN CATEGORY — ADJUSTED (Dioxin Category-by-Body Fat: Table 18-30)					
Stratum	Dioxin Category	n	Adjusted Mean^a	Difference of Adjusted Mean vs. Comparisons (95% C.I.)^b	p-Value^c
Obese: >25%	Comparison	205	105.51		
	Background RH	43	112.68	7.17 --	0.125
	Low RH	55	105.60	0.09 --	0.984
	High RH	65	118.94	13.43 --	0.001
	Low plus High RH	120	112.62	7.11 --	0.026
Lean or Normal: ≤25%	Comparison	691	104.45		
	Background RH	285	102.10	-2.35 --	0.210
	Low RH	148	105.47	1.02 --	0.673
	High RH	143	103.53	-0.92 --	0.710
	Low plus High RH	291	104.51	0.06 --	0.975

Table N-2-14. (Continued)
Interaction Table for 2-Hour Postprandial Glucose (mg/dl) (Nondiabetics)
(Continuous)

d) MODEL 3: RANCH HANDS AND COMPARISONS BY DIOXIN CATEGORY — ADJUSTED (Dioxin Category-by-Family History of Diabetes: Table 18-30)					
Stratum	Dioxin Category	n	Adjusted Mean^a	Difference of Adjusted Mean vs. Comparisons (95% C.I.)^b	p-Value^c
No	Comparison	695	101.50		
	Background RH	264	101.58	0.08 --	0.964
	Low RH	162	103.04	1.54 --	0.491
	High RH	161	107.98	6.48 --	0.006
	Low plus High RH	323	105.48	3.98 --	0.026
Yes	Comparison	201	109.78		
	Background RH	64	106.14	-3.64 --	0.352
	Low RH	41	105.83	-3.95 --	0.394
	High RH	47	102.03	-7.75 --	0.074
	Low plus High RH	88	103.78	-6.00 --	0.081

^a Transformed from natural logarithm scale.

^b Difference of means after transformation to original scale; confidence interval on difference of means not presented because analysis was performed on natural logarithm scale.

^c P-value is based on difference of means on natural logarithm scale.

Note: Model 3: RH = Ranch Hand.

Comparison: Current Dioxin $\leq$ 10 ppt.

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

Low (Ranch Hand): Current Dioxin $>$ 10 ppt, 10 ppt $<$ Initial Dioxin $\leq$ 143 ppt.

High (Ranch Hand): Current Dioxin $>$ 10 ppt, Initial Dioxin $>$ 143 ppt.

Table N-2-15.
Interaction Table for 2-Hour Postprandial Glucose (Nondiabetics)
(Discrete)

a) MODEL 1: RANCH HANDS VS. COMPARISONS — ADJUSTED (Group-by-Body Fat: Table 18-31)						
Stratum	Occupational Category	Group	n	Percent Impaired	Adj. Relative Risk (95% C.I.)	p-Value
Obese: >25%	<i>All</i>	<i>Ranch Hand</i>	175	27.4	<i>1.56 (0.97,2.50)</i>	<i>0.064</i>
		<i>Comparison</i>	242	20.4		
Lean or Normal: ≤25%	<i>All</i>	<i>Ranch Hand</i>	618	10.8	<i>1.12 (0.79,1.58)</i>	<i>0.536</i>
		<i>Comparison</i>	838	9.5		
Obese: >25%	Officer	Ranch Hand	59	25.4	1.63 (0.88,3.01)	0.119
		Comparison	89	15.7		
	Enlisted Flyer	Ranch Hand	28	25.0	1.06 (0.49,2.27)	0.885
		Comparison	37	24.3		
	Enlisted Groundcrew	Ranch Hand	88	29.6	1.74 (1.00,3.02)	0.050
		Comparison	116	22.4		
Lean or Normal: ≤25%	Officer	Ranch Hand	247	9.3	1.18 (0.71,1.97)	0.527
		Comparison	352	8.8		
	Enlisted Flyer	Ranch Hand	106	12.3	0.77 (0.39,1.51)	0.441
		Comparison	126	14.3		
	Enlisted Groundcrew	Ranch Hand	265	11.7	1.26 (0.79,2.00)	0.334
		Comparison	360	9.2		

Table N-2-15. (Continued)
Interaction Table for 2-Hour Postprandial Glucose (Nondiabetics)
(Discrete)

b) MODEL 2: RANCH HANDS — INITIAL DIOXIN — ADJUSTED (Initial Dioxin-by-Race: Table 18-31)					
Initial Dioxin Category Summary Statistics				Analysis Results for Log₂ (Initial Dioxin)	
Stratum	Initial Dioxin	n	Percent Impaired	Adjusted Relative Risk (95% C.I.)^a	p-Value
Non-Black	Low	128	16.4	1.17 (0.95,1.45)	0.146
	Medium	133	18.1		
	High	133	20.3		
Black	Low	13	0.0	--	--
	Medium	8	0.0		
	High	6	16.7		

c) MODEL 4: RANCH HANDS — CURRENT DIOXIN — ADJUSTED (Current Dioxin-by-Race: Table 18-31)					
Current Dioxin Category Summary Statistics				Analysis Results for Log₂ (Current Dioxin + 1)	
Stratum	Current Dioxin	n	Percent Impaired	Adjusted Relative Risk (95% C.I.)^b	p-Value
Non-Black	Low	255	10.6	1.26 (1.07,1.48)	0.006
	Medium	226	14.2		
	High	232	20.3		
Black	Low	11	0.0	--	--
	Medium	17	0.0		
	High	12	8.3		

Table N-2-15. (Continued)
Interaction Table for 2-Hour Postprandial Glucose (Nondiabetics)
(Discrete)

d) MODEL 5: RANCH HANDS — CURRENT DIOXIN — ADJUSTED (Current Dioxin-by-Race: Table 18-31)					
Current Dioxin Category Summary Statistics				Analysis Results for Log₂ (Current Dioxin + 1)	
Stratum	Current Dioxin	n	Percent Impaired	Adjusted Relative Risk (95% C.I.)^b	p-Value
Non-Black	Low	259	8.9	1.26 (1.08,1.47)	0.008
	Medium	220	15.0		
	High	221	21.3		
Black	Low	12	0.0	--	--
	Medium	17	0.0		
	High	11	9.1		

e) MODEL 6: RANCH HANDS — CURRENT DIOXIN — ADJUSTED (Current Dioxin-by-Race: Table 18-31)					
Current Dioxin Category Summary Statistics				Analysis Results for Log₂ (Current Dioxin + 1)	
Stratum	Current Dioxin	n	Percent Impaired	Adjusted Relative Risk (95% C.I.)^b	p-Value
Non-Black	Low	258	8.9	1.22 (1.04,1.43)	0.016
	Medium	220	15.0		
	High	221	21.3		
Black	Low	12	0.0	--	--
	Medium	17	0.0		
	High	11	9.1		

^a Relative risk for a twofold increase in initial dioxin.

^b Relative risk for a twofold increase in current dioxin.

--: Adjusted relative risk, confidence interval, and p-value not presented due to the sparse number of abnormalities.

Note: Model 2: Low = 39-98 ppt; Medium = >98-232 ppt; High = >232 ppt.

Model 4: Low = ≤8.1 ppt; Medium = >8.1-20.5 ppt; High = >20.5 ppt.

Models 5 and 6: Low = ≤ 46 ppq; Medium = > 46-128 ppq; High = > 128 ppq.

Table N-2-16.
Interaction Table for Fasting Urinary Glucose (All Participants)

a) MODEL 3: RANCH HANDS AND COMPARISONS BY DIOXIN CATEGORY — ADJUSTED (Dioxin Category-by-Personality Type: Table 18-32)					
Stratum	Dioxin Category	n	Percent Present	Adjusted Relative Risk (95% C.I.)^a	p-Value
Type A	Comparison	443	3.4		
	Background RH	175	0.0	--	--
	Low RH	113	3.5	0.59 (0.90,3.78)	0.581
	High RH	99	6.1	1.92 (0.45,8.12)	0.374
	Low plus High RH	212	4.7	1.06 (0.32,3.52)	0.921
Type B	Comparison	615	2.9		
	Background RH	199	3.0	1.49 (0.57,3.91)	0.418
	Low RH	143	2.8	0.82 (0.27,2.51)	0.726
	High RH	160	5.6	1.55 (0.64,3.75)	0.327
	Low plus High RH	303	4.3	1.19 (0.56,2.54)	0.655

b) MODEL 3: RANCH HANDS AND COMPARISONS BY DIOXIN CATEGORY — ADJUSTED (Dioxin Category-by-Body Fat: Table 18-32)					
Stratum	Dioxin Category	n	Percent Present	Adjusted Relative Risk (95% C.I.)^a	p-Value
Obese: >25%	Comparison	277	6.9		
	Background RH	53	3.8	0.45 (0.10,2.05)	0.302
	Low RH	79	1.3	0.11 (0.01,1.11)	0.062
	High RH	92	10.9	1.86 (0.39,8.79)	0.433
	Low plus High RH	171	6.4	0.80 (0.25,2.54)	0.709
Lean or Normal: ≤25%	Comparison	781	1.8		
	Background RH	321	1.2	0.81 (0.26,2.51)	0.715
	Low RH	177	4.0	1.93 (0.76,4.90)	0.170
	High RH	167	3.0	1.64 (0.56,4.75)	0.364
	Low plus High RH	344	3.5	1.79 (0.81,3.96)	0.151

Table N-2-16. (Continued)
Interaction Table for Fasting Urinary Glucose (All Participants)

c) MODEL 5: RANCH HANDS — CURRENT DIOXIN — ADJUSTED (Current Dioxin-by-Personality Type: Table 18-32)					
Current Dioxin Category Summary Statistics				Analysis Results for Log_e (Current Dioxin + 1)	
Stratum	Current Dioxin	n	Percent Present	Adjusted Relative Risk (95% C.I.)^b	p-Value
Type A	Low	127	0.0	2.56 (1.59,4.12)	<0.001
	Medium	139	0.7		
	High	113	7.1		
Type B	Low	169	2.4	1.48 (1.11,1.97)	0.007
	Medium	149	3.4		
	High	174	5.8		

d) MODEL 6: RANCH HANDS — CURRENT DIOXIN — ADJUSTED (Current Dioxin-by-Personality Type: Table 18-32)					
Current Dioxin Category Summary Statistics				Analysis Results for Log_e (Current Dioxin + 1)	
Stratum	Current Dioxin	n	Percent Present	Adjusted Relative Risk (95% C.I.)^b	p-Value
Type A	Low	128	0.0	2.51 (1.54,4.10)	<0.001
	Medium	141	0.7		
	High	117	7.7		
Type B	Low	171	2.3	1.39 (1.04,1.86)	0.027
	Medium	153	3.3		
	High	178	5.6		

^a Relative risk and confidence interval relative to Comparisons.

^b Relative risk for a twofold increase in current dioxin.

--: Adjusted relative risk, confidence interval, and p-value not presented due to the sparse number of abnormalities.

Note: Model 3: RH = Ranch Hand.

Comparison: Current Dioxin ≤ 10 ppt.

Background (Ranch Hand): Current Dioxin ≤ 10 ppt.

Low (Ranch Hand): Current Dioxin > 10 ppt, 10 ppt < Initial Dioxin ≤ 143 ppt.

High (Ranch Hand): Current Dioxin > 10 ppt, Initial Dioxin > 143 ppt.

Models 5 and 6: Low = ≤ 46 ppq; Medium = > 46-128 ppq; High = > 128 ppq.

Table N-2-17.
Interaction Table for Fasting Urinary Glucose (Diabetics)

a) MODEL 3: RANCH HANDS AND COMPARISONS BY DIOXIN CATEGORY — ADJUSTED (Dioxin Category-by-Body Fat: Table 18-33)					
Stratum	Dioxin Category	n	Percent Present	Adjusted Relative Risk (95% C.I.)^a	p-Value
Obese: >25%	Comparison	71	25.4		
	Background RH	9	22.2	1.20 (0.16,8.74)	0.861
	Low RH	22	4.5	0.02 (0.00,0.42)	0.014
	High RH	27	37.0	2.73 (0.73,10.24)	0.136
	Low plus High RH	49	22.4	0.92 (0.31,2.78)	0.888
Lean or Normal: ≤25%	Comparison	75	18.7		
	Background RH	30	13.3	0.97 (0.21,4.42)	0.967
	Low RH	26	26.9	2.77 (0.73,10.48)	0.133
	High RH	19	21.1	0.40 (0.07,2.28)	0.299
	Low plus High RH	45	24.4	1.22 (0.40,3.68)	0.729

^a Relative risk and confidence interval relative to Comparisons.

Note: Model 3: RH = Ranch Hand.

Comparison: Current Dioxin ≤ 10 ppt.

Background (Ranch Hand): Current Dioxin ≤ 10 ppt.

Low (Ranch Hand): Current Dioxin > 10 ppt, 10 ppt < Initial Dioxin ≤ 143 ppt.

High (Ranch Hand): Current Dioxin > 10 ppt, Initial Dioxin > 143 ppt.