

ORIGINAL RESEARCH ARTICLE

**Sociodemographic correlates of human papillomavirus vaccination and its association with hematological and metabolic parameters: A cross-sectional analysis of the National Health and Nutrition Examination Survey 2011–2023**

**Supplementary File**

**Table S1. Interaction analysis of hematological and metabolic parameters across subgroups**

Characteristic	No. of participants	Statistics	Odds ratio (95% CI)	p-value	p for interaction
DNL					
Race/Hispanic origin, n (%)					0.712
Mexican American	8,258,922	688 (23.76)	0.39 (0.00, 96.18)	0.7381	
Other Hispanic	7,194,255	586 (30.63)	0.40 (0.00, 100.65)	0.7441	
Non-Hispanic White	48,117,546	2,104 (33.28)	9.06 (0.19, 437.34)	0.2693	
Non-Hispanic Black	10,221,230	1,200 (25.42)	2.41 (0.15, 38.67)	0.5378	
Other race	8,723,395	970 (25.20)	1.34 (0.02, 103.31)	0.8946	
Education level, n (%)					
Less than 9th grade	1,697,446	172 (12.96)	310.72 (0.00, inf.)	0.4159	0.298
9–11th grade (Includes 12th grade with no diploma)	5,330,129	548 (14.41)	9.09 (0.01, 8,564.85)	0.5298	
High school graduate/GED or equivalent	20,633,571	1,219 (26.01)	213.02 (0.71, 6,3912.00)	0.0698	
Some college or AA degree	27,850,881	2,030 (32.12)	1.12 (0.04, 31.51)	0.9468	
College graduate or above	27,003,321	1,579 (35.83)	0.41 (0.00, 100.91)	0.7505	
Smoked at least 100 cigarettes in life, n (%)					
Yes	28,555,445	1,838 (23.31)	152.24 (2.11, 10,996.56)	0.0243	0.049
No	53,959,905	3,710 (33.95)	0.45 (0.03, 8.06)	0.5926	
Gender, n (%)					
Male	39,791,037	2,552 (19.33)	7.41 (0.08, 668.57)	0.3863	0.667
Female	42,724,313	2,996 (40.46)	2.34 (0.22, 25.04)	0.4846	
Hypertension, n (%)					
Yes	1,739,480	144 (12.66)	0.01 (0.00, 7,022.30)	0.4694	0.366
No	80,775,870	5,404 (30.65)	4.31 (0.38, 49.10)	0.2435	

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**Table S1. Continued**

Characteristic	No. of participants	Statistics	Odds ratio (95% CI)	p-value	p for interaction
<b>HRR</b>					
Race/Hispanic origin, <i>n</i> (%)					0.432
Mexican American	8,258,922	688 (23.76)	5.24 (0.93, 29.56)	0.0646	
Other Hispanic	7,194,255	586 (30.63)	2.34 (0.34, 16.26)	0.3946	
Non-Hispanic White	48,117,546	2,104 (33.28)	1.15 (0.27, 4.89)	0.846	
Non-Hispanic Black	10,221,230	1,200 (25.42)	1.16 (0.26, 5.25)	0.8503	
Other race	8,723,395	970 (25.20)	3.83 (0.85, 17.15)	0.084	
Education level, <i>n</i> (%)					0.561
Less than 9th grade	1,697,446	172 (12.96)	2.59 (0.03, 249.40)	0.6841	
9–11th grade (Includes 12th grade with no diploma)	5,330,129	548 (14.41)	8.44 (1.12, 63.45)	0.042	
High school graduate/GED or equivalent	20,633,571	1,219 (26.01)	1.92 (0.38, 9.58)	0.4307	
Some college or AA degree	27,850,881	2,030 (32.12)	1.99 (0.61, 6.48)	0.2587	
College graduate or above	27,003,321	1,579 (35.83)	0.82 (0.15, 4.43)	0.8188	
Smoked at least 100 cigarettes in life, <i>n</i> (%)					0.442
Yes	28,555,445	1,838 (23.31)	2.44 (0.41, 14.51)	0.3305	
No	53,959,905	3,710 (33.95)	1.31 (0.47, 3.62)	0.6047	
Gender, <i>n</i> (%)					0.765
Male	39,791,037	2,552 (19.33)	2.02 (0.21, 19.51)	0.5447	
Female	42,724,313	2,996 (40.46)	1.45 (0.54, 3.86)	0.4616	
Hypertension, <i>n</i> (%)					0.891
Yes	1,739,480	144 (12.66)	1.31 (0.06, 28.32)	0.8638	
No	80,775,870	5,404 (30.65)	1.61 (0.55, 4.74)	0.3885	
<b>Eosinophils (1,000 cells/μL)</b>					
Race/Hispanic origin, <i>n</i> (%)					0.54
Mexican American	8,258,922	688 (23.76)	4.28 (0.47, 39.39)	0.203	
Other Hispanic	7,194,255	586 (30.63)	0.47 (0.08, 2.90)	0.4203	
Non-Hispanic White	48,117,546	2,104 (33.28)	1.25 (0.52, 3.02)	0.6148	
Non-Hispanic Black	10,221,230	1,200 (25.42)	0.95 (0.32, 2.77)	0.9231	
Other race	8,723,395	970 (25.20)	0.89 (0.28, 2.83)	0.843	
Education level, <i>n</i> (%)					0.277
Less than 9th grade	1,697,446	172 (12.96)	1.95 (0.15, 26.28)	0.615	
9–11th grade (Includes 12th grade with no diploma)	5,330,129	548 (14.41)	4.89 (0.15, 161.00)	0.3769	
High school graduate/GED or equivalent	20,633,571	1,219 (26.01)	0.34 (0.07, 1.80)	0.2107	
Some college or AA degree	27,850,881	2,030 (32.12)	1.18 (0.55, 2.54)	0.6783	
College graduate or above	27,003,321	1,579 (35.83)	2.14 (0.59, 7.69)	0.2489	

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**Table S1. Continued**

Characteristic	No. of participants	Statistics	Odds ratio (95% CI)	p-value	p for interaction
Smoked at least 100 cigarettes in life, <i>n</i> (%)					0.931
Yes	28,555,445	1,838 (23.31)	1.09 (0.24, 4.92)	0.9091	
No	53,959,905	3,710 (33.95)	1.17 (0.64, 2.11)	0.6124	
Gender, <i>n</i> (%)					0.758
Male	39,791,037	2,552 (19.33)	1.00 (0.27, 3.66)	0.9974	
Female	42,724,313	2,996 (40.46)	1.23 (0.70, 2.17)	0.4748	
Hypertension, <i>n</i> (%)					0.406
Yes	1,739,480	144 (12.66)	5.37 (0.12, 238.78)	0.388	
No	80,775,870	5,404 (30.65)	1.13 (0.60, 2.12)	0.7079	
Lymphocyte (1,000 cells/ $\mu$ L)					
Race/Hispanic origin, <i>n</i> (%)					0.575
Mexican American	8,258,922	688 (23.76)	0.94 (0.60, 1.47)	0.7866	
Other Hispanic	7,194,255	586 (30.63)	0.68 (0.46, 1.00)	0.0526	
Non-Hispanic White	48,117,546	2,104 (33.28)	0.81 (0.65, 1.01)	0.062	
Non-Hispanic Black	10,221,230	1,200 (25.42)	0.99 (0.78, 1.26)	0.9514	
Other race	8,723,395	970 (25.20)	0.90 (0.64, 1.27)	0.565	
Education level, <i>n</i> (%)					0.608
Less than 9th grade	1,697,446	172 (12.96)	0.85 (0.33, 2.18)	0.737	
9–11th grade (Includes 12th grade with no diploma)	5,330,129	548 (14.41)	0.63 (0.38, 1.06)	0.0851	
High school graduate/GED or equivalent	20,633,571	1,219 (26.01)	0.71 (0.51, 0.99)	0.0483	
Some college or AA degree	27,850,881	2,030 (32.12)	0.89 (0.67, 1.16)	0.3869	
College graduate or above	27,003,321	1,579 (35.83)	0.91 (0.65, 1.26)	0.5649	
Smoked at least 100 cigarettes in life, <i>n</i> (%)					0.952
Yes	28,555,445	1,838 (23.31)	0.84 (0.64, 1.12)	0.2414	
No	53,959,905	3,710 (33.95)	0.84 (0.70, 1.00)	0.0532	
Gender, <i>n</i> (%)					0.594
Male	39,791,037	2,552 (19.33)	0.79 (0.59, 1.07)	0.1275	
Female	42,724,313	2,996 (40.46)	0.86 (0.74, 1.01)	0.0655	
Hypertension, <i>n</i> (%)					0.654
Yes	1,739,480	144 (12.66)	0.99 (0.46, 2.11)	0.9766	
No	80,775,870	5,404 (30.65)	0.84 (0.72, 0.98)	0.0257	

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**Table S1. Continued**

Characteristic	No. of participants	Statistics	Odds ratio (95% CI)	p-value	p for interaction
Monocyte (1,000 cells/ $\mu$ L)					
Race/Hispanic origin, <i>n</i> (%)					0.638
Mexican American	8,258,922	688 (23.76)	0.73 (0.19, 2.73)	0.638	
Other Hispanic	7,194,255	586 (30.63)	0.36 (0.07, 1.93)	0.2367	
Non-Hispanic White	48,117,546	2,104 (33.28)	0.40 (0.16, 1.02)	0.058	
Non-Hispanic Black	10,221,230	1,200 (25.42)	0.76 (0.29, 1.96)	0.5689	
Other race	8,723,395	970 (25.20)	1.13 (0.26, 4.83)	0.8685	
Education level, <i>n</i> (%)					0.382
Less than 9th grade	1,697,446	172 (12.96)	0.09 (0.00, 2.72)	0.1695	
9–11th grade (Includes 12th grade with no diploma)	5,330,129	548 (14.41)	0.37 (0.04, 3.43)	0.3877	
High school graduate/GED or equivalent	20,633,571	1,219 (26.01)	0.26 (0.09, 0.73)	0.0124	
Some college or AA degree	27,850,881	2,030 (32.12)	0.64 (0.28, 1.47)	0.3002	
College graduate or above	27,003,321	1,579 (35.83)	0.77 (0.26, 2.31)	0.649	
Smoked at least 100 cigarettes in life, <i>n</i> (%)					0.962
Yes	28,555,445	1,838 (23.31)	0.50 (0.28, 0.90)	0.0231	
No	53,959,905	3,710 (33.95)	0.49 (0.20, 1.22)	0.129	
Gender, <i>n</i> (%)					0.616
Male	39,791,037	2,552 (19.33)	0.42 (0.18, 1.02)	0.0586	
Female	42,724,313	2,996 (40.46)	0.56 (0.27, 1.14)	0.1154	
Hypertension, <i>n</i> (%)					0.975
Yes	1,739,480	144 (12.66)	0.51 (0.05, 5.33)	0.5781	
No	80,775,870	5,404 (30.65)	0.49 (0.27, 0.90)	0.0254	
Segmented neutrophils (1,000 cell/ $\mu$ L)					
Race/Hispanic origin, <i>n</i> (%)					0.475
Mexican American	8,258,922	688 (23.76)	0.97 (0.85, 1.10)	0.6178	
Other Hispanic	7,194,255	586 (30.63)	0.87 (0.73, 1.02)	0.0923	
Non-Hispanic White	48,117,546	2,104 (33.28)	1.01 (0.91, 1.13)	0.7892	
Non-Hispanic Black	10,221,230	1,200 (25.42)	0.97 (0.87, 1.08)	0.5339	
Other race	8,723,395	970 (25.20)	1.01 (0.87, 1.18)	0.858	
Education level, <i>n</i> (%)					0.93
Less than 9th grade	1,697,446	172 (12.96)	1.07 (0.62, 1.85)	0.8002	
9–11th grade (Includes 12th grade with no diploma)	5,330,129	548 (14.41)	1.07 (0.89, 1.29)	0.4612	
High school graduate/GED or equivalent	20,633,571	1,219 (26.01)	1.00 (0.87, 1.16)	0.951	
Some college or AA degree	27,850,881	2,030 (32.12)	0.97 (0.87, 1.07)	0.4973	
College graduate or above	27,003,321	1,579 (35.83)	0.99 (0.88, 1.11)	0.8623	

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**Table S1. Continued**

Characteristic	No. of participants	Statistics	Odds ratio (95% CI)	p-value	p for interaction
Smoked at least 100 cigarettes in life, n (%)					0.134
Yes	28,555,445	1,838 (23.31)	1.10 (0.93, 1.29)	0.2634	
No	53,959,905	3,710 (33.95)	0.94 (0.87, 1.02)	0.1731	
Gender, n (%)					0.792
Male	39,791,037	2,552 (19.33)	0.98 (0.84, 1.13)	0.7401	
Female	42,724,313	2,996 (40.46)	1.00 (0.93, 1.07)	0.9222	
Hypertension, n (%)					0.525
Yes	1,739,480	144 (12.66)	0.88 (0.62, 1.26)	0.4929	
No	80,775,870	5,404 (30.65)	0.99 (0.93, 1.06)	0.7986	
Total cholesterol (mmol/L)					
Race/Hispanic origin, n (%)					0.942
Mexican American	8,258,922	688 (23.76)	1.15 (0.87, 1.51)	0.3349	
Other Hispanic	7,194,255	586 (30.63)	1.00 (0.70, 1.41)	0.9777	
Non-Hispanic White	48,117,546	2,104 (33.28)	1.00 (0.80, 1.26)	0.9945	
Non-Hispanic Black	10,221,230	1,200 (25.42)	1.04 (0.85, 1.27)	0.7045	
Other race	8,723,395	970 (25.20)	1.07 (0.78, 1.48)	0.6665	
Education level, n (%)					0.577
Less than 9th grade	1,697,446	172 (12.96)	0.72 (0.40, 1.28)	0.2623	
9–11th grade (Includes 12th grade with no diploma)	5,330,129	548 (14.41)	0.93 (0.68, 1.27)	0.6375	
High school graduate/GED or equivalent	20,633,571	1,219 (26.01)	1.06 (0.77, 1.47)	0.7155	
Some college or AA degree	27,850,881	2,030 (32.12)	1.11 (0.94, 1.33)	0.2243	
College graduate or above	27,003,321	1,579 (35.83)	0.95 (0.73, 1.23)	0.6805	
Smoked at least 100 cigarettes in life, n (%)					0.269
Yes	28,555,445	1,838 (23.31)	1.16 (0.83, 1.61)	0.4003	
No	53,959,905	3,710 (33.95)	0.96 (0.85, 1.09)	0.5662	
Gender, n (%)					0.137
Male	39,791,037	2,552 (19.33)	1.16 (0.89, 1.52)	0.2846	
Female	42,724,313	2,996 (40.46)	0.95 (0.83, 1.09)	0.46	
Hypertension, n (%)					0.811
Yes	1,739,480	144 (12.66)	1.10 (0.58, 2.09)	0.7642	
No	80,775,870	5,404 (30.65)	1.02 (0.87, 1.19)	0.804	

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**Table S1. Continued**

Characteristic	No. of participants	Statistics	Odds ratio (95% CI)	p-value	p for interaction
Hematocrit (%)					
Race/Hispanic origin, n (%)					0.176
Mexican American	8,258,922	688 (23.76)	1.03 (0.95, 1.12)	0.4289	
Other Hispanic	7,194,255	586 (30.63)	0.99 (0.91, 1.07)	0.7554	
Non-Hispanic White	48,117,546	2,104 (33.28)	0.98 (0.93, 1.02)	0.3065	
Non-Hispanic Black	10,221,230	1,200 (25.42)	1.02 (0.96, 1.08)	0.4515	
Other race	8,723,395	970 (25.20)	1.05 (1.00, 1.12)	0.0724	
Education level, n (%)					
Less than 9th grade	1,697,446	172 (12.96)	1.03 (0.86, 1.24)	0.7385	0.53
9–11th grade (Includes 12th grade with no diploma)	5,330,129	548 (14.41)	1.04 (0.95, 1.14)	0.3942	
High school graduate/GED or equivalent	20,633,571	1,219 (26.01)	0.98 (0.93, 1.05)	0.6054	
Some college or AA degree	27,850,881	2,030 (32.12)	1.02 (0.98, 1.06)	0.2743	
College graduate or above	27,003,321	1,579 (35.83)	0.98 (0.92, 1.04)	0.4549	
Smoked at least 100 cigarettes in life, n (%)					
Yes	28,555,445	1,838 (23.31)	1.02 (0.96, 1.09)	0.486	0.254
No	53,959,905	3,710 (33.95)	0.99 (0.95, 1.02)	0.4193	
Gender, n (%)					
Male	39,791,037	2,552 (19.33)	1.00 (0.93, 1.06)	0.8934	0.92
Female	42,724,313	2,996 (40.46)	1.00 (0.96, 1.04)	0.9765	
Hypertension, n (%)					
Yes	1,739,480	144 (12.66)	1.02 (0.91, 1.14)	0.7278	0.712
No	80,775,870	5,404 (30.65)	1.00 (0.96, 1.03)	0.901	
Hemoglobin (g/dL)					
Race/Hispanic origin, n (%)					0.336
Mexican American	8,258,922	688 (23.76)	1.13 (0.91, 1.41)	0.2848	
Other Hispanic	7,194,255	586 (30.63)	0.99 (0.79, 1.24)	0.9075	
Non-Hispanic White	48,117,546	2,104 (33.28)	0.97 (0.84, 1.11)	0.6368	
Non-Hispanic Black	10,221,230	1,200 (25.42)	1.06 (0.90, 1.24)	0.4895	
Other race	8,723,395	970 (25.20)	1.14 (0.98, 1.33)	0.1001	
Education level, n (%)					
Less than 9th grade	1,697,446	172 (12.96)	1.10 (0.66, 1.84)	0.7177	0.571
9–11th grade (Includes 12th grade with no diploma)	5,330,129	548 (14.41)	1.21 (0.95, 1.54)	0.125	
High school graduate/GED or equivalent	20,633,571	1,219 (26.01)	0.98 (0.83, 1.17)	0.8571	
Some college or AA degree	27,850,881	2,030 (32.12)	1.06 (0.95, 1.18)	0.3088	
College graduate or above	27,003,321	1,579 (35.83)	0.97 (0.81, 1.15)	0.6995	

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**Table S1. Continued**

Characteristic	No. of participants	Statistics	Odds ratio (95% CI)	p-value	p for interaction
Smoked at least 100 cigarettes in life, n (%)					0.214
Yes	28,555,445	1,838 (23.31)	1.10 (0.91, 1.32)	0.3276	
No	53,959,905	3,710 (33.95)	0.98 (0.88, 1.09)	0.7231	
Gender, n (%)					0.728
Male	39,791,037	2,552 (19.33)	0.99 (0.81, 1.22)	0.9371	
Female	42,724,313	2,996 (40.46)	1.03 (0.92, 1.15)	0.6052	
Hypertension, n (%)					0.794
Yes	1,739,480	144 (12.66)	1.06 (0.79, 1.42)	0.7038	
No	80,775,870	5,404 (30.65)	1.02 (0.91, 1.14)	0.7765	
Mean cell hemoglobin concentration (g/dL)					0.675
Race/Hispanic origin, n (%)					0.675
Mexican American	8,258,922	688 (23.76)	1.24 (0.92, 1.67)	0.1696	
Other Hispanic	7,194,255	586 (30.63)	1.08 (0.77, 1.52)	0.6665	
Non-Hispanic White	48,117,546	2,104 (33.28)	1.09 (0.92, 1.30)	0.3279	
Non-Hispanic Black	10,221,230	1,200 (25.42)	0.99 (0.81, 1.20)	0.8835	
Other race	8,723,395	970 (25.20)	0.95 (0.79, 1.16)	0.6305	
Education level, n (%)					0.464
Less than 9th grade	1,697,446	172 (12.96)	1.19 (0.53, 2.66)	0.6791	
9–11th grade (Includes 12th grade with no diploma)	5,330,129	548 (14.41)	1.65 (1.12, 2.41)	0.0127	
High school graduate/GED or equivalent	20,633,571	1,219 (26.01)	1.07 (0.89, 1.28)	0.4827	
Some college or AA degree	27,850,881	2,030 (32.12)	1.01 (0.84, 1.21)	0.9253	
College graduate or above	27,003,321	1,579 (35.83)	1.07 (0.87, 1.31)	0.5223	
Smoked at least 100 cigarettes in life, n (%)					0.341
Yes	28,555,445	1,838 (23.31)	1.16 (0.94, 1.43)	0.1745	
No	53,959,905	3,710 (33.95)	1.03 (0.91, 1.17)	0.6195	
Gender, n (%)					0.344
Male	39,791,037	2,552 (19.33)	0.99 (0.78, 1.25)	0.9148	
Female	42,724,313	2,996 (40.46)	1.11 (1.00, 1.24)	0.0576	
Hypertension, n (%)					0.84
Yes	1,739,480	144 (12.66)	0.99 (0.47, 2.12)	0.9871	
No	80,775,870	5,404 (30.65)	1.07 (0.95, 1.20)	0.26	

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**Table S1. Continued**

Characteristic	No. of participants	Statistics	Odds ratio (95% CI)	p-value	p for interaction
Mean cell hemoglobin (pg)					
Race/Hispanic origin, n (%)					0.136
Mexican American	8,258,922	688 (23.76)	1.17 (1.05, 1.30)	0.0071	
Other Hispanic	7,194,255	586 (30.63)	1.05 (0.93, 1.19)	0.4151	
Non-Hispanic White	48,117,546	2,104 (33.28)	0.98 (0.90, 1.07)	0.6761	
Non-Hispanic Black	10,221,230	1,200 (25.42)	0.96 (0.90, 1.02)	0.2119	
Other race	8,723,395	970 (25.20)	0.97 (0.90, 1.04)	0.3679	
Education level, n (%)					
Less than 9th grade	1,697,446	172 (12.96)	1.23 (0.94, 1.60)	0.1306	0.093
9–11th grade (Includes 12th grade with no diploma)	5,330,129	548 (14.41)	1.15 (1.01, 1.30)	0.0314	
High school graduate/GED or equivalent	20,633,571	1,219 (26.01)	1.01 (0.95, 1.07)	0.7596	
Some college or AA degree	27,850,881	2,030 (32.12)	0.99 (0.93, 1.07)	0.8868	
College graduate or above	27,003,321	1,579 (35.83)	0.94 (0.86, 1.02)	0.1562	
Smoked at least 100 cigarettes in life, n (%)					
Yes	28,555,445	1,838 (23.31)	1.02 (0.93, 1.13)	0.6397	0.42
No	53,959,905	3,710 (33.95)	0.98 (0.94, 1.02)	0.3572	
Gender, n (%)					
Male	39,791,037	2,552 (19.33)	1.01 (0.92, 1.11)	0.8462	0.672
Female	42,724,313	2,996 (40.46)	0.99 (0.94, 1.03)	0.5798	
Hypertension, n (%)					
Yes	1,739,480	144 (12.66)	0.94 (0.72, 1.21)	0.618	0.636
No	80,775,870	5,404 (30.65)	0.99 (0.95, 1.04)	0.771	
Mean cell volume (fL)					
Race/Hispanic origin, n (%)					0.113
Mexican American	8,258,922	688 (23.76)	1.06 (1.02, 1.11)	0.0118	
Other Hispanic	7,194,255	586 (30.63)	1.02 (0.97, 1.08)	0.4532	
Non-Hispanic White	48,117,546	2,104 (33.28)	0.98 (0.95, 1.02)	0.3115	
Non-Hispanic Black	10,221,230	1,200 (25.42)	0.98 (0.95, 1.00)	0.11	
Other race	8,723,395	970 (25.20)	0.98 (0.95, 1.01)	0.2689	
Education level, n (%)					
Less than 9th grade	1,697,446	172 (12.96)	1.11 (0.98, 1.25)	0.1161	0.064
9–11th grade (Includes 12th grade with no diploma)	5,330,129	548 (14.41)	1.04 (0.99, 1.09)	0.1327	
High school graduate/GED or equivalent	20,633,571	1,219 (26.01)	1.00 (0.97, 1.03)	0.8771	
Some college or AA degree	27,850,881	2,030 (32.12)	1.00 (0.97, 1.03)	0.8035	
College graduate or above	27,003,321	1,579 (35.83)	0.96 (0.93, 1.00)	0.0365	

(Cont'd...)

**Table S1. Continued**

Characteristic	No. of participants	Statistics	Odds ratio (95% CI)	p-value	p for interaction
Smoked at least 100 cigarettes in life, n (%)					0.548
Yes	28,555,445	1,838 (23.31)	1.00 (0.96, 1.04)	0.9992	
No	53,959,905	3,710 (33.95)	0.99 (0.97, 1.01)	0.1757	
Gender, n (%)					0.347
Male	39,791,037	2,552 (19.33)	1.01 (0.97, 1.04)	0.7873	
Female	42,724,313	2,996 (40.46)	0.98 (0.96, 1.01)	0.1416	
Hypertension, n (%)					0.645
Yes	1,739,480	144 (12.66)	0.97 (0.86, 1.08)	0.5365	
No	80,775,870	5,404 (30.65)	0.99 (0.97, 1.01)	0.287	
Mean platelet volume (fL)					
Race/Hispanic origin, n (%)					0.488
Mexican American	8,258,922	688 (23.76)	1.35 (0.94, 1.94)	0.1081	
Other Hispanic	7,194,255	586 (30.63)	0.98 (0.72, 1.34)	0.91	
Non-Hispanic White	48,117,546	2,104 (33.28)	1.19 (0.95, 1.49)	0.1286	
Non-Hispanic Black	10,221,230	1,200 (25.42)	1.26 (0.95, 1.66)	0.1088	
Other race	8,723,395	970 (25.20)	0.94 (0.73, 1.22)	0.6511	
Education level, n (%)					0.14
Less than 9th grade	1,697,446	172 (12.96)	1.51 (0.70, 3.30)	0.2995	
9–11th grade (Includes 12th grade with no diploma)	5,330,129	548 (14.41)	0.76 (0.52, 1.11)	0.1617	
High school graduate/GED or equivalent	20,633,571	1,219 (26.01)	1.37 (0.95, 1.96)	0.0922	
Some college or AA degree	27,850,881	2,030 (32.12)	1.02 (0.86, 1.21)	0.8252	
College graduate or above	27,003,321	1,579 (35.83)	1.26 (1.02, 1.55)	0.0349	
Smoked at least 100 cigarettes in life, n (%)					0.735
Yes	28,555,445	1,838 (23.31)	1.12 (0.81, 1.56)	0.4932	
No	53,959,905	3,710 (33.95)	1.19 (1.04, 1.36)	0.0113	
Gender, n (%)					0.836
Male	39,791,037	2,552 (19.33)	1.14 (0.87, 1.50)	0.3408	
Female	42,724,313	2,996 (40.46)	1.18 (1.01, 1.38)	0.0401	
Hypertension, n (%)					<0.001
Yes	1,739,480	144 (12.66)	0.51 (0.35, 0.73)	5.00E-04	
No	80,775,870	5,404 (30.65)	1.19 (1.02, 1.37)	0.0253	

(Cont'd...)

**Table S1. Continued**

Characteristic	No. of participants	Statistics	Odds ratio (95% CI)	p-value	p for interaction
Platelet count (1,000 cells/ $\mu$ L)					
Race/Hispanic origin, n (%)					0.747
Mexican American	8,258,922	688 (23.76)	1.00 (0.99, 1.00)	0.0952	
Other Hispanic	7,194,255	586 (30.63)	1.00 (0.99, 1.00)	0.2938	
Non-Hispanic White	48,117,546	2,104 (33.28)	1.00 (1.00, 1.00)	0.4978	
Non-Hispanic Black	10,221,230	1,200 (25.42)	1.00 (1.00, 1.00)	0.1153	
Other race	8,723,395	970 (25.20)	1.00 (0.99, 1.00)	0.0736	
Education level, n (%)					0.153
Less than 9th grade	1,697,446	172 (12.96)	1.00 (0.98, 1.01)	0.4509	
9–11th grade (Includes 12th grade with no diploma)	5,330,129	548 (14.41)	1.00 (1.00, 1.01)	0.4316	
High school graduate/GED or equivalent	20,633,571	1,219 (26.01)	1.00 (1.00, 1.00)	0.7221	
Some college or AA degree	27,850,881	2,030 (32.12)	1.00 (1.00, 1.00)	0.7273	
College graduate or above	27,003,321	1,579 (35.83)	1.00 (0.99, 1.00)	0.0065	
Smoked at least 100 cigarettes in life, n (%)					0.715
Yes	28,555,445	1,838 (23.31)	1.00 (1.00, 1.00)	0.3816	
No	53,959,905	3,710 (33.95)	1.00 (1.00, 1.00)	0.0264	
Gender, n (%)					0.67
Male	39,791,037	2,552 (19.33)	1.00 (1.00, 1.00)	0.4154	
Female	42,724,313	2,996 (40.46)	1.00 (1.00, 1.00)	0.0725	
Hypertension, n (%)					0.007
Yes	1,739,480	144 (12.66)	1.01 (1.00, 1.02)	0.0258	
No	80,775,870	5,404 (30.65)	1.00 (1.00, 1.00)	0.0162	
Red blood cell (million cells/ $\mu$ L)					
Race/Hispanic origin, n (%)					0.17
Mexican American	8,258,922	688 (23.76)	0.94 (0.50, 1.77)	0.8572	
Other Hispanic	7,194,255	586 (30.63)	0.79 (0.38, 1.62)	0.519	
Non-Hispanic White	48,117,546	2,104 (33.28)	0.96 (0.63, 1.47)	0.8602	
Non-Hispanic Black	10,221,230	1,200 (25.42)	1.60 (0.99, 2.59)	0.0597	
Other race	8,723,395	970 (25.20)	1.77 (0.99, 3.17)	0.0584	
Education level, n (%)					0.835
Less than 9th grade	1,697,446	172 (12.96)	0.77 (0.17, 3.48)	0.7323	
9–11th grade (Includes 12th grade with no diploma)	5,330,129	548 (14.41)	1.04 (0.42, 2.57)	0.9286	
High school graduate/GED or equivalent	20,633,571	1,219 (26.01)	0.93 (0.56, 1.55)	0.7798	
Some college or AA degree	27,850,881	2,030 (32.12)	1.26 (0.84, 1.88)	0.2672	
College graduate or above	27,003,321	1,579 (35.83)	1.10 (0.69, 1.77)	0.6847	

(Cont'd...)

**Table S1. Continued**

Characteristic	No. of participants	Statistics	Odds ratio (95% CI)	p-value	p for interaction
Smoked at least 100 cigarettes in life, <i>n</i> (%)					0.474
Yes	28,555,445	1,838 (23.31)	1.26 (0.74, 2.14)	0.3932	
No	53,959,905	3,710 (33.95)	1.02 (0.73, 1.43)	0.9159	
Gender, <i>n</i> (%)					0.333
Male	39,791,037	2,552 (19.33)	0.92 (0.59, 1.44)	0.7202	
Female	42,724,313	2,996 (40.46)	1.22 (0.82, 1.81)	0.3279	
Hypertension, <i>n</i> (%)					0.684
Yes	1,739,480	144 (12.66)	1.41 (0.41, 4.90)	0.5891	
No	80,775,870	5,404 (30.65)	1.09 (0.79, 1.48)	0.6062	
Red cell distribution width (%)					
Race/Hispanic origin, <i>n</i> (%)					0.35
Mexican American	8,258,922	688 (23.76)	0.86 (0.74, 0.99)	0.0397	
Other Hispanic	7,194,255	586 (30.63)	0.83 (0.69, 1.00)	0.0592	
Non-Hispanic White	48,117,546	2,104 (33.28)	0.97 (0.81, 1.15)	0.7142	
Non-Hispanic Black	10,221,230	1,200 (25.42)	1.06 (0.91, 1.23)	0.4654	
Other race	8,723,395	970 (25.20)	0.94 (0.78, 1.12)	0.4812	
Education level, <i>n</i> (%)					0.419
Less than 9th grade	1,697,446	172 (12.96)	0.89 (0.60, 1.32)	0.5632	
9–11th grade (Includes 12th grade with no diploma)	5,330,129	548 (14.41)	0.83 (0.67, 1.04)	0.1055	
High school graduate/GED or equivalent	20,633,571	1,219 (26.01)	0.89 (0.75, 1.06)	0.1991	
Some college or AA degree	27,850,881	2,030 (32.12)	0.96 (0.85, 1.08)	0.4999	
College graduate or above	27,003,321	1,579 (35.83)	1.06 (0.89, 1.25)	0.5435	
Smoked at least 100 cigarettes in life, <i>n</i> (%)					0.651
Yes	28,555,445	1,838 (23.31)	0.99 (0.82, 1.19)	0.9211	
No	53,959,905	3,710 (33.95)	0.95 (0.86, 1.04)	0.2792	
Gender, <i>n</i> (%)					0.938
Male	39,791,037	2,552 (19.33)	0.96 (0.74, 1.24)	0.7303	
Female	42,724,313	2,996 (40.46)	0.96 (0.89, 1.05)	0.4057	
Hypertension, <i>n</i> (%)					0.597
Yes	1,739,480	144 (12.66)	1.10 (0.64, 1.89)	0.7291	
No	80,775,870	5,404 (30.65)	0.96 (0.87, 1.06)	0.4353	

(Cont'd...)

**Table S1. Continued**

Characteristic	No. of participants	Statistics	Odds ratio (95% CI)	p-value	p for interaction
WBC (1,000 cells/ $\mu$ L)					
Race/Hispanic origin, <i>n</i> (%)					0.563
Mexican American	8,258,922	688 (23.76)	0.97 (0.85, 1.10)	0.639	
Other Hispanic	7,194,255	586 (30.63)	0.87 (0.77, 0.99)	0.0374	
Non-Hispanic White	48,117,546	2,104 (33.28)	0.98 (0.90, 1.06)	0.6016	
Non-Hispanic Black	10,221,230	1,200 (25.42)	0.97 (0.89, 1.06)	0.524	
Other race	8,723,395	970 (25.20)	1.00 (0.88, 1.13)	0.9882	
Education level, <i>n</i> (%)					0.94
Less than 9th grade	1,697,446	172 (12.96)	1.01 (0.67, 1.53)	0.9477	
9–11th grade (Includes 12th grade with no diploma)	5,330,129	548 (14.41)	1.02 (0.86, 1.20)	0.8468	
High school graduate/GED or equivalent	20,633,571	1,219 (26.01)	0.95 (0.88, 1.03)	0.1966	
Some college or AA degree	27,850,881	2,030 (32.12)	0.96 (0.88, 1.05)	0.3579	
College graduate or above	27,003,321	1,579 (35.83)	0.98 (0.90, 1.08)	0.7338	
Smoked at least 100 cigarettes in life, <i>n</i> (%)					0.14
Yes	28,555,445	1,838 (23.31)	1.03 (0.94, 1.14)	0.5061	
No	53,959,905	3,710 (33.95)	0.94 (0.88, 1.01)	0.0824	
Gender, <i>n</i> (%)					0.555
Male	39,791,037	2,552 (19.33)	0.95 (0.86, 1.05)	0.2979	
Female	42,724,313	2,996 (40.46)	0.98 (0.93, 1.04)	0.461	
Hypertension, <i>n</i> (%)					0.721
Yes	1,739,480	144 (12.66)	0.93 (0.75, 1.16)	0.5334	
No	80,775,870	5,404 (30.65)	0.97 (0.92, 1.02)	0.2616	
MLR					
Race/Hispanic origin, <i>n</i> (%)					0.979
Mexican American	8,258,922	688 (23.76)	0.91 (0.17, 4.79)	0.9128	
Other Hispanic	7,194,255	586 (30.63)	1.13 (0.05, 24.40)	0.9374	
Non-Hispanic White	48,117,546	2,104 (33.28)	1.23 (0.47, 3.23)	0.6725	
Non-Hispanic Black	10,221,230	1,200 (25.42)	0.88 (0.35, 2.25)	0.794	
Other race	8,723,395	970 (25.20)	2.06 (0.13, 31.96)	0.6085	
Education level, <i>n</i> (%)					0.894
Less than 9th grade	1,697,446	172 (12.96)	0.02 (0.00, 224.39)	0.3967	
9–11th grade (Includes 12th grade with no diploma)	5,330,129	548 (14.41)	2.02 (0.03, 131.32)	0.7427	
High school graduate/GED or equivalent	20,633,571	1,219 (26.01)	1.42 (0.48, 4.16)	0.5276	
Some college or AA degree	27,850,881	2,030 (32.12)	0.96 (0.23, 3.95)	0.9579	
College graduate or above	27,003,321	1,579 (35.83)	1.08 (0.18, 6.62)	0.9356	

(Cont'd...)

**Table S1. Continued**

<b>Characteristic</b>	<b>No. of participants</b>	<b>Statistics</b>	<b>Odds ratio (95% CI)</b>	<b>p-value</b>	<b>p for interaction</b>
Smoked at least 100 cigarettes in life, <i>n</i> (%)					0.693
Yes	28,555,445	1,838 (23.31)	0.88 (0.15, 5.10)	0.8904	
No	53,959,905	3,710 (33.95)	1.28 (0.62, 2.64)	0.5049	
Gender, <i>n</i> (%)					0.254
Male	39,791,037	2,552 (19.33)	1.72 (0.58, 5.12)	0.3343	
Female	42,724,313	2,996 (40.46)	0.63 (0.20, 1.99)	0.4349	
Hypertension, <i>n</i> (%)					0.29
Yes	1,739,480	144 (12.66)	0.05 (0.00, 14.00)	0.3012	
No	80,775,870	5,404 (30.65)	1.21 (0.60, 2.47)	0.5939	
NLR					
Race/Hispanic origin, <i>n</i> (%)					0.146
Mexican American	8,258,922	688 (23.76)	0.93 (0.73, 1.17)	0.5153	
Other Hispanic	7,194,255	586 (30.63)	0.86 (0.67, 1.11)	0.2532	
Non-Hispanic White	48,117,546	2,104 (33.28)	1.15 (0.98, 1.34)	0.0898	
Non-Hispanic Black	10,221,230	1,200 (25.42)	0.96 (0.84, 1.10)	0.553	
Other race	8,723,395	970 (25.20)	0.99 (0.77, 1.29)	0.9659	
Education level, <i>n</i> (%)					0.64
Less than 9th grade	1,697,446	172 (12.96)	1.34 (0.45, 4.03)	0.5982	
9–11th grade (Includes 12th grade with no diploma)	5,330,129	548 (14.41)	1.24 (0.78, 1.96)	0.3689	
High school graduate/GED or equivalent	20,633,571	1,219 (26.01)	1.18 (0.90, 1.54)	0.2285	
Some college or AA degree	27,850,881	2,030 (32.12)	0.99 (0.85, 1.15)	0.9115	
College graduate or above	27,003,321	1,579 (35.83)	1.01 (0.85, 1.21)	0.897	
Smoked at least 100 cigarettes in life, <i>n</i> (%)					0.285
Yes	28,555,445	1,838 (23.31)	1.26 (0.86, 1.85)	0.2393	
No	53,959,905	3,710 (33.95)	1.01 (0.93, 1.10)	0.7453	
Gender, <i>n</i> (%)					0.358
Male	39,791,037	2,552 (19.33)	1.14 (0.93, 1.40)	0.2222	
Female	42,724,313	2,996 (40.46)	1.01 (0.89, 1.14)	0.8745	
Hypertension, <i>n</i> (%)					0.181
Yes	1,739,480	144 (12.66)	0.67 (0.36, 1.25)	0.2148	
No	80,775,870	5,404 (30.65)	1.07 (0.98, 1.17)	0.1632	

(Cont'd...)

**Table S1. Continued**

Characteristic	No. of participants	Statistics	Odds ratio (95% CI)	p-value	p for interaction
NMLR					
Race/Hispanic origin, <i>n</i> (%)					0.191
Mexican American	8,258,922	688 (23.76)	0.93 (0.75, 1.15)	0.5208	
Other Hispanic	7,194,255	586 (30.63)	0.88 (0.69, 1.11)	0.2855	
Non-Hispanic White	48,117,546	2,104 (33.28)	1.13 (0.98, 1.30)	0.1039	
Non-Hispanic Black	10,221,230	1,200 (25.42)	0.97 (0.86, 1.09)	0.563	
Other race	8,723,395	970 (25.20)	1.00 (0.78, 1.28)	0.9957	
Education level, <i>n</i> (%)					0.684
Less than 9th grade	1,697,446	172 (12.96)	1.22 (0.44, 3.42)	0.7009	
9–11th grade (Includes 12th grade with no diploma)	5,330,129	548 (14.41)	1.22 (0.80, 1.86)	0.3635	
High school graduate/GED or equivalent	20,633,571	1,219 (26.01)	1.15 (0.91, 1.44)	0.2403	
Some college or AA degree	27,850,881	2,030 (32.12)	0.99 (0.86, 1.14)	0.9061	
College graduate or above	27,003,321	1,579 (35.83)	1.01 (0.86, 1.19)	0.8972	
Smoked at least 100 cigarettes in life, <i>n</i> (%)					0.322
Yes	28,555,445	1,838 (23.31)	1.22 (0.86, 1.73)	0.2702	
No	53,959,905	3,710 (33.95)	1.01 (0.94, 1.09)	0.7156	
Gender, <i>n</i> (%)					0.36
Male	39,791,037	2,552 (19.33)	1.12 (0.93, 1.34)	0.2286	
Female	42,724,313	2,996 (40.46)	1.00 (0.90, 1.13)	0.9321	
Hypertension, <i>n</i> (%)					0.175
Yes	1,739,480	144 (12.66)	0.69 (0.39, 1.22)	0.2055	
No	80,775,870	5,404 (30.65)	1.06 (0.98, 1.15)	0.1729	
SII (cells/ $\mu$ L)					
Race/Hispanic origin, <i>n</i> (%)					0.071
Mexican American	8,258,922	688 (23.76)	1.00 (1.00, 1.00)	0.3231	
Other Hispanic	7,194,255	586 (30.63)	1.00 (1.00, 1.00)	0.1986	
Non-Hispanic White	48,117,546	2,104 (33.28)	1.00 (1.00, 1.00)	0.1328	
Non-Hispanic Black	10,221,230	1,200 (25.42)	1.00 (1.00, 1.00)	0.2751	
Other race	8,723,395	970 (25.20)	1.00 (1.00, 1.00)	0.2778	
Education level, <i>n</i> (%)					0.229
Less than 9th grade	1,697,446	172 (12.96)	1.00 (1.00, 1.00)	0.8522	
9–11th grade (Includes 12th grade with no diploma)	5,330,129	548 (14.41)	1.00 (1.00, 1.00)	0.1118	
High school graduate/GED or equivalent	20,633,571	1,219 (26.01)	1.00 (1.00, 1.00)	0.1942	
Some college or AA degree	27,850,881	2,030 (32.12)	1.00 (1.00, 1.00)	0.6455	
College graduate or above	27,003,321	1,579 (35.83)	1.00 (1.00, 1.00)	0.4254	

(Cont'd...)

**Table S1. Continued**

Characteristic	No. of participants	Statistics	Odds ratio (95% CI)	p-value	p for interaction
Smoked at least 100 cigarettes in life, <i>n</i> (%)					0.258
Yes	28,555,445	1,838 (23.31)	1.00 (1.00, 1.00)	0.2698	
No	53,959,905	3,710 (33.95)	1.00 (1.00, 1.00)	0.7361	
Gender, <i>n</i> (%)					0.437
Male	39,791,037	2,552 (19.33)	1.00 (1.00, 1.00)	0.4238	
Female	42,724,313	2,996 (40.46)	1.00 (1.00, 1.00)	0.7556	
Hypertension, <i>n</i> (%)					0.849
Yes	1,739,480	144 (12.66)	1.00 (1.00, 1.00)	0.9092	
No	80,775,870	5,404 (30.65)	1.00 (1.00, 1.00)	0.6241	
SIRI (cells/ $\mu$ L)					
Race/Hispanic origin, <i>n</i> (%)					0.496
Mexican American	8,258,922	688 (23.76)	0.96 (0.80, 1.14)	0.6272	
Other Hispanic	7,194,255	586 (30.63)	0.76 (0.55, 1.04)	0.0918	
Non-Hispanic White	48,117,546	2,104 (33.28)	1.03 (0.84, 1.25)	0.7936	
Non-Hispanic Black	10,221,230	1,200 (25.42)	0.96 (0.85, 1.08)	0.4861	
Other race	8,723,395	970 (25.20)	0.97 (0.72, 1.32)	0.8637	
Education level, <i>n</i> (%)					0.897
Less than 9th grade	1,697,446	172 (12.96)	0.75 (0.26, 2.22)	0.6092	
9–11th grade (Includes 12th grade with no diploma)	5,330,129	548 (14.41)	1.13 (0.75, 1.69)	0.5705	
High school graduate/GED or equivalent	20,633,571	1,219 (26.01)	1.03 (0.81, 1.32)	0.7918	
Some college or AA degree	27,850,881	2,030 (32.12)	0.95 (0.81, 1.11)	0.5231	
College graduate or above	27,003,321	1,579 (35.83)	0.96 (0.82, 1.12)	0.5967	
Smoked at least 100 cigarettes in life, <i>n</i> (%)					0.481
Yes	28,555,445	1,838 (23.31)	1.09 (0.75, 1.58)	0.6476	
No	53,959,905	3,710 (33.95)	0.94 (0.84, 1.06)	0.3307	
Gender, <i>n</i> (%)					0.309
Male	39,791,037	2,552 (19.33)	1.07 (0.85, 1.34)	0.5864	
Female	42,724,313	2,996 (40.46)	0.91 (0.79, 1.06)	0.2249	
Hypertension, <i>n</i> (%)					0.303
Yes	1,739,480	144 (12.66)	0.64 (0.30, 1.39)	0.2656	
No	80,775,870	5,404 (30.65)	0.98 (0.88, 1.10)	0.7792	

Notes: ‘No. of participants’ indicates NHANES survey-weighted population estimates presented as whole numbers (no decimals). ‘Statistics’ indicates the unweighted sample size *n* with the survey-weighted percentage in parentheses.

Abbreviations: AA: Associate of Arts; CI: Confidence interval; DNLR: Derived neutrophil-to-lymphocyte ratio; GED: General Educational Development; HRR: Hemoglobin-to-red blood cell ratio; MLR: Monocyte-to-lymphocyte ratio; NLR: Neutrophil-to-lymphocyte ratio; NMLR: Neutrophil-to-monocyte-to-lymphocyte ratio; SII: Systemic inflammatory index; SIRI: Systemic inflammatory response index; WBC: White blood cell count.

**Table S2. Interaction analysis of sociodemographic and health-related characteristics across subgroups**

Parameter	No. of participants	Statistics	Odds ratio (95% CI)	p-value	p for interaction
Vitamin B12 (pmol/L)					
Race/Hispanic origin, n (%)					0.818
Mexican American	5,682,312	266 (7.72)	1.00 (1.00, 1.00)	0.2462	
Other Hispanic	4,325,434	214 (13.28)	1.00 (1.00, 1.01)	0.1637	
Non-Hispanic White	31,475,203	930 (17.42)	1.00 (1.00, 1.00)	0.1851	
Non-Hispanic Black	6,625,064	528 (17.21)	1.00 (1.00, 1.00)	0.1979	
Other race	4,826,022	425 (14.40)	1.00 (1.00, 1.00)	0.7449	
Education level, n (%)					0.178
Less than 9th grade	1,282,398	64 (11.70)	1.00 (0.99, 1.00)	0.3563	
9–11th grade (Includes 12th grade with no diploma)	5,300,301	279 (8.46)	1.01 (1.00, 1.01)	0.032	
High school graduate/GED or equivalent	10,207,771	492 (11.31)	1.00 (1.00, 1.00)	0.6759	
Some college or AA degree	19,998,156	891 (20.46)	1.00 (1.00, 1.00)	0.0345	
College graduate or above	16,145,409	637 (15.40)	1.00 (1.00, 1.00)	0.3605	
Gender, n (%)					0.628
Male	25,916,529	1,160 (5.74)	1.00 (1.00, 1.00)	0.6558	
Female	27,017,508	1,203 (25.33)	1.00 (1.00, 1.00)	0.0244	
Ferritin (µg/L)					
Race/Hispanic origin, n (%)					0.648
Mexican American	5,879,529	310 (31.48)	1.00 (1.00, 1.00)	0.8683	
Other Hispanic	5,378,132	279 (37.52)	1.00 (1.00, 1.00)	0.1946	
Non-Hispanic White	35,039,227	844 (41.40)	1.00 (1.00, 1.00)	0.8299	
Non-Hispanic Black	7,620,080	539 (30.17)	1.00 (1.00, 1.00)	0.6775	
Other race	6,560,880	396 (29.83)	1.00 (1.00, 1.00)	0.2082	
Education level, n (%)					0.438
Less than 9th grade	1,076,446	74 (16.11)	0.99 (0.99, 1.00)	0.0451	
9–11th grade (Includes 12th grade with no diploma)	3,034,137	190 (20.27)	1.01 (0.99, 1.02)	0.375	
High school graduate/GED or equivalent	15,799,613	526 (30.98)	1.00 (1.00, 1.00)	0.4211	
Some college or AA degree	19,953,420	885 (39.53)	1.00 (1.00, 1.00)	0.6971	
College graduate or above	20,614,230	693 (43.95)	1.00 (1.00, 1.00)	0.8448	
Gender, n (%)					0.697
Male	22,479,840	583 (24.72)	1.00 (1.00, 1.00)	0.4437	
Female	37,998,008	1,785 (44.94)	1.00 (1.00, 1.00)	0.9801	

(Cont'd...)

Table S2. Continued

Parameter	No. of participants	Statistics	Odds ratio (95% CI)	p-value	p for interaction
Direct HDL cholesterol (mmol/L)					
Race/Hispanic origin, n (%)					0.544
Mexican American	9,320,927	672 (21.18)	0.74 (0.34, 1.60)	0.4445	
Other Hispanic	7,083,966	504 (26.99)	0.68 (0.32, 1.44)	0.3213	
Non-Hispanic White	51,096,299	1,812 (29.78)	1.00 (0.65, 1.54)	0.9894	
Non-Hispanic Black	10,898,772	1,175 (23.89)	0.70 (0.47, 1.04)	0.0828	
Other race	8,899,516	928 (21.71)	0.64 (0.39, 1.05)	0.0799	
Education level, n (%)					0.148
Less than 9th grade	2,007,159	179 (11.85)	2.33 (0.22, 25.01)	0.4867	
9–11th grade (Includes 12th grade with no diploma)	5,915,534	535 (12.49)	0.76 (0.30, 1.97)	0.5801	
High school graduate/GED or equivalent	21,567,859	1,140 (23.42)	1.43 (0.81, 2.50)	0.2195	
Some college or AA degree	30,251,920	1,905 (29.38)	0.92 (0.58, 1.47)	0.7266	
College graduate or above	27,549,803	1,331 (31.67)	0.60 (0.37, 0.97)	0.0429	
Gender, n (%)					0.198
Male	42,097,235	2,362 (16.50)	1.27 (0.66, 2.42)	0.4777	
Female	45,202,246	2,729 (36.93)	0.75 (0.55, 1.03)	0.0766	
Insulin (pmol/L)					
Race/Hispanic origin, n (%)					0.126
Mexican American	6,965,686	343 (21.11)	1.00 (1.00, 1.00)	0.778	
Other Hispanic	5,104,189	246 (25.83)	1.00 (0.99, 1.00)	0.0498	
Non-Hispanic White	35,238,546	900 (30.55)	1.00 (1.00, 1.00)	0.178	
Non-Hispanic Black	7,692,158	444 (26.50)	1.00 (1.00, 1.00)	0.7116	
Other race	6,987,268	409 (23.37)	1.01 (1.00, 1.01)	0.0422	
Education level, n (%)					0.08
Less than 9th grade	1,605,000	80 (4.75)	0.99 (0.99, 0.99)	<0.0001	
9–11th grade (Includes 12th grade with no diploma)	4,181,690	215 (13.47)	1.00 (1.00, 1.01)	0.5906	
High school graduate/GED or equivalent	14,313,799	497 (23.02)	1.00 (1.00, 1.00)	0.7814	
Some college or AA degree	21,716,582	870 (30.59)	1.00 (1.00, 1.00)	0.0083	
College graduate or above	20,150,532	679 (32.98)	1.00 (1.00, 1.00)	0.4913	
Gender, n (%)					0.334
Male	30,584,611	1,081 (16.64)	1.00 (1.00, 1.00)	0.793	
Female	31,403,238	1,261 (38.64)	1.00 (1.00, 1.00)	0.1332	

(Cont'd...)

**Table S2. Continued**

Parameter	No. of participants	Statistics	Odds ratio (95% CI)	p-value	p for interaction
Iron frozen, serum (µmol/L)					
Race/Hispanic origin, n (%)					0.462
Mexican American	4,479,823	163 (30.84)	1.01 (0.94, 1.10)	0.7473	
Other Hispanic	3,917,980	135 (36.45)	0.97 (0.91, 1.03)	0.3812	
Non-Hispanic White	27,183,814	419 (38.83)	0.98 (0.94, 1.01)	0.2184	
Non-Hispanic Black	5,777,701	349 (27.90)	1.02 (0.97, 1.08)	0.4951	
Other race	4,757,287	232 (26.71)	0.96 (0.91, 1.00)	0.0717	
Education level, n (%)					0.63
Less than 9th grade	690,410	33 (20.47)	0.89 (0.77, 1.03)	0.1574	
9–11th grade (Includes 12th grade with no diploma)	2,404,073	125 (18.95)	1.02 (0.94, 1.12)	0.6136	
High school graduate/GED or equivalent	13,008,738	331 (30.36)	0.99 (0.94, 1.04)	0.6045	
Some college or AA degree	14,865,942	491 (36.13)	0.99 (0.96, 1.02)	0.5732	
College graduate or above	15,147,441	318 (41.79)	0.98 (0.92, 1.03)	0.3991	
Gender, n (%)					0.743
Male	22,252,254	575 (24.97)	0.98 (0.94, 1.02)	0.3036	
Female	23,864,352	723 (44.80)	0.99 (0.96, 1.02)	0.3598	
LDL cholesterol (mmol/L)					
Race/Hispanic origin, n (%)					0.848
Mexican American	6,123,893	211 (14.38)	0.99 (0.56, 1.74)	0.9715	
Other Hispanic	4,446,609	155 (13.81)	0.96 (0.50, 1.82)	0.8927	
Non-Hispanic White	34,356,642	598 (20.37)	1.27 (0.89, 1.79)	0.1925	
Non-Hispanic Black	7,572,261	309 (21.92)	1.10 (0.68, 1.78)	0.6914	
Other race	5,352,133	297 (17.53)	1.44 (0.81, 2.58)	0.225	
Education level, n (%)					0.205
Less than 9th grade	1,996,545	63 (1.01)	0.32 (0.18, 0.57)	6.00E-04	
9–11th grade (Includes 12th grade with no diploma)	5,417,079	174 (9.98)	0.86 (0.51, 1.44)	0.5604	
High school graduate/GED or equivalent	11,391,828	327 (15.49)	1.64 (1.00, 2.68)	0.0602	
Some college or AA degree	21,313,803	560 (24.70)	0.99 (0.69, 1.44)	0.9725	
College graduate or above	17,701,240	445 (19.78)	1.45 (0.91, 2.31)	0.1252	
Gender, n (%)					0.974
Male	27,189,490	734 (8.24)	1.22 (0.82, 1.83)	0.3365	
Female	30,662,049	836 (28.87)	1.21 (0.93, 1.59)	0.1715	

(Cont'd...)

**Table S2. Continued**

Parameter	No. of participants	Statistics	Odds ratio (95% CI)	p-value	p for interaction
Transferrin saturation (%)					
Race/Hispanic origin, <i>n</i> (%)					0.518
Mexican American	4,479,823	163 (30.84)	1.01 (0.97, 1.05)	0.6849	
Other Hispanic	3,917,980	135 (36.45)	1.00 (0.96, 1.03)	0.8926	
Non-Hispanic White	27,183,814	419 (38.83)	0.98 (0.96, 1.01)	0.2312	
Non-Hispanic Black	5,777,701	349 (27.90)	1.01 (0.98, 1.04)	0.538	
Other race	4,757,287	232 (26.71)	0.99 (0.97, 1.01)	0.27	
Education level, <i>n</i> (%)					
Less than 9th grade	690,410	33 (20.47)	0.95 (0.88, 1.03)	0.2214	0.736
9–11th grade (Includes 12th grade with no diploma)	2,404,073	125 (18.95)	1.02 (0.97, 1.07)	0.5005	
High school graduate/GED or equivalent	13,008,738	331 (30.36)	0.99 (0.96, 1.01)	0.3104	
Some college or AA degree	14,865,942	491 (36.13)	0.99 (0.98, 1.01)	0.4421	
College graduate or above	15,147,441	318 (41.79)	0.99 (0.96, 1.03)	0.777	
Gender, <i>n</i> (%)					
Male	22,252,254	575 (24.97)	0.98 (0.96, 1.00)	0.1258	0.22
Female	23,864,352	723 (44.80)	1.00 (0.98, 1.02)	0.9172	
RBC folate (nmol/L)					
Race/Hispanic origin, <i>n</i> (%)					0.693
Mexican American	5,108,730	532 (14.42)	1.00 (1.00, 1.00)	0.4011	
Other Hispanic	3,801,591	390 (18.82)	1.00 (1.00, 1.00)	0.6019	
Non-Hispanic White	28,002,402	1480 (23.31)	1.00 (1.00, 1.00)	0.4701	
Non-Hispanic Black	5,891,773	876 (20.77)	1.00 (1.00, 1.00)	0.2126	
Other race	4,783,419	747 (18.78)	1.00 (1.00, 1.00)	0.8426	
Education level, <i>n</i> (%)					
Less than 9th grade	1,277,431	138 (9.27)	1.00 (1.00, 1.00)	0.5817	0.415
9–11th grade (Includes 12th grade with no diploma)	4,133,045	438 (8.84)	1.00 (1.00, 1.00)	0.4162	
High school graduate/GED or equivalent	10,001,592	864 (19.46)	1.00 (1.00, 1.00)	0.8957	
Some college or AA degree	17,017,232	1,490 (24.94)	1.00 (1.00, 1.00)	0.8702	
College graduate or above	15,158,616	1,095 (22.61)	1.00 (1.00, 1.00)	0.0243	
Gender, <i>n</i> (%)					
Male	21,552,392	1,806 (8.31)	1.00 (1.00, 1.00)	0.6686	0.443
Female	26,035,526	2,219 (31.92)	1.00 (1.00, 1.00)	0.383	

(Cont'd...)

**Table S2. Continued**

Parameter	No. of participants	Statistics	Odds ratio (95% CI)	p-value	p for interaction
Total cholesterol (mmol/L)					
Race/Hispanic origin, <i>n</i> (%)					0.804
Mexican American	9,320,927	672 (21.18)	1.12 (0.88, 1.43)	0.3704	
Other Hispanic	7,083,966	504 (26.99)	0.95 (0.64, 1.40)	0.7926	
Non-Hispanic White	51,096,299	1,812 (29.78)	0.99 (0.78, 1.27)	0.9563	
Non-Hispanic Black	10,898,772	1,175 (23.89)	1.16 (0.94, 1.45)	0.1743	
Other race	8,899,516	928 (21.71)	1.10 (0.77, 1.58)	0.5913	
Education level, <i>n</i> (%)					0.796
Less than 9th grade	2,007,159	179 (11.85)	0.75 (0.42, 1.34)	0.3285	
9–11th grade (Includes 12th grade with no diploma)	5,915,534	535 (12.49)	0.97 (0.71, 1.33)	0.8564	
High school graduate/GED or equivalent	21,567,859	1,140 (23.42)	1.11 (0.77, 1.60)	0.5931	
Some college or AA degree	30,251,920	1,905 (29.38)	1.05 (0.89, 1.24)	0.5473	
College graduate or above	27,549,803	1,331 (31.67)	0.97 (0.72, 1.31)	0.8602	
Gender, <i>n</i> (%)					0.127
Male	42,097,235	2,362 (16.50)	1.20 (0.87, 1.65)	0.2795	
Female	45,202,246	2,729 (36.93)	0.95 (0.83, 1.08)	0.4365	
TIBC (μmol/L)					
Race/Hispanic origin, <i>n</i> (%)					0.413
Mexican American	4,479,823	163 (30.84)	0.99 (0.96, 1.01)	0.3487	
Other Hispanic	3,917,980	135 (36.45)	0.97 (0.93, 1.00)	0.0684	
Non-Hispanic White	27,183,814	419 (38.83)	1.01 (0.97, 1.05)	0.7326	
Non-Hispanic Black	5,777,701	349 (27.90)	0.99 (0.95, 1.04)	0.8257	
Other race	4,757,287	232 (26.71)	0.98 (0.94, 1.01)	0.2114	
Education level, <i>n</i> (%)					0.144
Less than 9th grade	690,410	33 (20.47)	0.93 (0.84, 1.02)	0.1707	
9–11th grade (Includes 12th grade with no diploma)	2,404,073	125 (18.95)	0.99 (0.92, 1.07)	0.7821	
High school graduate/GED or equivalent	13,008,738	331 (30.36)	1.02 (0.98, 1.07)	0.3547	
Some college or AA degree	14,865,942	491 (36.13)	1.01 (0.98, 1.05)	0.498	
College graduate or above	15,147,441	318 (41.79)	0.96 (0.92, 1.01)	0.1465	
Gender, <i>n</i> (%)					0.044
Male	22,252,254	575 (24.97)	1.04 (0.99, 1.09)	0.1926	
Female	23,864,352	723 (44.80)	0.98 (0.96, 1.00)	0.136	

(Cont'd...)

**Table S2. Continued**

Parameter	No. of participants	Statistics	Odds ratio (95% CI)	p-value	p for interaction
<b>Triglyceride (mmol/L)</b>					
Race/Hispanic origin, <i>n</i> (%)					0.365
Mexican American	6,123,893	211 (14.38)	0.83 (0.48, 1.44)	0.5168	
Other Hispanic	4,446,609	155 (13.81)	0.82 (0.32, 2.10)	0.6786	
Non-Hispanic White	34,356,642	598 (20.37)	0.79 (0.55, 1.13)	0.2061	
Non-Hispanic Black	7,572,261	309 (21.92)	1.48 (0.77, 2.84)	0.2444	
Other race	5,352,133	297 (17.53)	1.38 (0.81, 2.35)	0.2403	
Education level, <i>n</i> (%)					0.261
Less than 9th grade	1,996,545	63 (1.01)	0.85 (0.49, 1.48)	0.5797	
9–11th grade (Includes 12th grade with no diploma)	5,417,079	174 (9.98)	1.02 (0.49, 2.11)	0.9651	
High school graduate/GED or equivalent	11,391,828	327 (15.49)	1.70 (0.75, 3.85)	0.2113	
Some college or AA degree	21,313,803	560 (24.70)	0.85 (0.54, 1.34)	0.4853	
College graduate or above	17,701,240	445 (19.78)	0.72 (0.48, 1.07)	0.1159	
Gender, <i>n</i> (%)					0.33
Male	27,189,490	734 (8.24)	1.14 (0.58, 2.24)	0.7115	
Female	30,662,049	836 (28.87)	0.77 (0.57, 1.05)	0.1067	
<b>UIBC, serum (μmol/L)</b>					
Race/Hispanic origin, <i>n</i> (%)					0.473
Mexican American	4,479,823	163 (30.84)	0.99 (0.96, 1.02)	0.4406	
Other Hispanic	3,917,980	135 (36.45)	0.99 (0.96, 1.02)	0.4056	
Non-Hispanic White	27,183,814	419 (38.83)	1.01 (0.98, 1.05)	0.4612	
Non-Hispanic Black	5,777,701	349 (27.90)	0.99 (0.96, 1.03)	0.679	
Other race	4,757,287	232 (26.71)	1.00 (0.98, 1.03)	0.9198	
Education level, <i>n</i> (%)					0.423
Less than 9th grade	690,410	33 (20.47)	0.99 (0.92, 1.07)	0.8157	
9–11th grade (Includes 12th grade with no diploma)	2,404,073	125 (18.95)	0.99 (0.94, 1.04)	0.6586	
High school graduate/GED or equivalent	13,008,738	331 (30.36)	1.02 (0.99, 1.06)	0.2426	
Some college or AA degree	14,865,942	491 (36.13)	1.01 (0.99, 1.03)	0.3697	
College graduate or above	15,147,441	318 (41.79)	0.99 (0.95, 1.03)	0.5497	
Gender, <i>n</i> (%)					0.04
Male	22,252,254	575 (24.97)	1.04 (1.00, 1.09)	0.1027	
Female	23,864,352	723 (44.80)	0.99 (0.97, 1.01)	0.4781	

(Cont'd...)

**Table S2. Continued**

Parameter	No. of participants	Statistics	Odds ratio (95% CI)	p-value	p for interaction
Retinol (µmol/L)					
Race/Hispanic origin, n (%)					NaN
Mexican American	3,423,538	79 (31.81)	0.46 (0.17, 1.28)	NaN	
Other Hispanic	2,687,925	51 (36.28)	1.18 (0.26, 5.44)	NaN	
Non-Hispanic White	18,583,199	193 (35.84)	0.68 (0.21, 2.22)	NaN	
Non-Hispanic Black	3,990,192	125 (29.54)	0.41 (0.11, 1.48)	NaN	
Other race	3,449,477	113 (31.30)	0.48 (0.13, 1.80)	NaN	
Education level, n (%)					
Less than 9th grade	334,092	13 (7.43)	inf. (inf., inf.)	NaN	NaN
9–11th grade (Includes 12th grade with no diploma)	2,063,898	57 (13.76)	1.84 (0.47, 7.26)	NaN	
High school graduate/GED or equivalent	8,921,413	135 (33.47)	0.62 (0.12, 3.26)	NaN	
Some college or AA degree	9,821,609	209 (34.79)	0.44 (0.14, 1.36)	NaN	
College graduate or above	10,993,320	147 (38.85)	0.73 (0.34, 1.56)	NaN	
Gender, n (%)					
Male	9,610,874	150 (17.63)	1.12 (0.14, 8.97)	0.9248	0.464
Female	22,523,460	411 (41.23)	0.49 (0.26, 0.89)	0.1452	
Vitamin C (µmol/L)					
Race/Hispanic origin, n (%)					NaN
Mexican American	3,423,538	79 (31.81)	0.98 (0.96, 1.01)	NaN	
Other Hispanic	2,687,925	51 (36.28)	1.02 (1.00, 1.04)	NaN	
Non-Hispanic White	18,583,199	193 (35.84)	1.00 (0.99, 1.02)	NaN	
Non-Hispanic Black	3,990,192	125 (29.54)	0.98 (0.96, 1.00)	NaN	
Other race	3,449,477	113 (31.30)	0.96 (0.94, 0.98)	NaN	
Education level, n (%)					
Less than 9th grade	334,092	13 (7.43)	0.99 (0.97, 1.01)	NaN	NaN
9–11th grade (Includes 12th grade with no diploma)	2,063,898	57 (13.76)	1.03 (0.98, 1.08)	NaN	
High school graduate/GED or equivalent	8,921,413	135 (33.47)	0.99 (0.97, 1.01)	NaN	
Some college or AA degree	9,821,609	209 (34.79)	0.97 (0.96, 0.99)	NaN	
College graduate or above	10,993,320	147 (38.85)	1.02 (0.99, 1.05)	NaN	
Gender, n (%)					
Male	9,610,874	150 (17.63)	1.02 (0.99, 1.05)	0.255	0.137
Female	22,523,460	411 (41.23)	0.99 (0.98, 1.00)	0.2137	

(Cont'd...)

Table S2. Continued

Parameter	No. of participants	Statistics	Odds ratio (95% CI)	p-value	p for interaction
Alpha-tocopherol (µmol/L)					
Race/Hispanic origin, n (%)					NaN
Mexican American	3,423,538	79 (31.81)	0.98 (0.92, 1.04)	NaN	
Other Hispanic	2,687,925	51 (36.28)	1.08 (0.96, 1.22)	NaN	
Non-Hispanic White	18,583,199	193 (35.84)	1.01 (0.97, 1.05)	NaN	
Non-Hispanic Black	3,990,192	125 (29.54)	1.02 (0.94, 1.10)	NaN	
Other race	3,449,477	113 (31.30)	0.97 (0.87, 1.09)	NaN	
Education level, n (%)					
Less than 9th grade	334,092	13 (7.43)	1.06 (0.86, 1.30)	NaN	NaN
9–11th grade (Includes 12th grade with no diploma)	2,063,898	57 (13.76)	1.32 (0.99, 1.76)	NaN	
High school graduate/GED or equivalent	8,921,413	135 (33.47)	1.06 (0.99, 1.14)	NaN	
Some college or AA degree	9,821,609	209 (34.79)	0.96 (0.90, 1.02)	NaN	
College graduate or above	10,993,320	147 (38.85)	1.00 (0.94, 1.06)	NaN	
Gender, n (%)					
Male	9,610,874	150 (17.63)	1.07 (0.94, 1.21)	0.4302	0.427
Female	22,523,460	411 (41.23)	1.00 (0.97, 1.03)	0.932	
Glycohemoglobin (%)					
Race/Hispanic origin, n (%)					0.601
Mexican American	9,440,036	678 (21.00)	0.98 (0.74, 1.29)	0.8784	
Other Hispanic	7,129,913	507 (27.31)	0.70 (0.47, 1.02)	0.068	
Non-Hispanic White	51,343,276	1,825 (29.85)	0.97 (0.77, 1.23)	0.8135	
Non-Hispanic Black	11,125,084	1,197 (24.02)	1.08 (0.86, 1.35)	0.5279	
Other race	9,020,661	940 (21.72)	0.99 (0.62, 1.56)	0.9536	
Education level, n (%)					
Less than 9th grade	2,024,482	181 (11.75)	0.73 (0.41, 1.30)	0.2841	0.335
9–11th grade (Includes 12th grade with no diploma)	5,947,066	539 (12.50)	0.66 (0.47, 0.92)	0.0178	
High school graduate/GED or equivalent	21,945,861	1,162 (23.25)	1.03 (0.69, 1.56)	0.871	
Some college or AA degree	30,531,952	1,923 (29.43)	1.08 (0.90, 1.31)	0.4057	
College graduate or above	27,602,404	1,341 (31.95)	0.79 (0.53, 1.19)	0.2708	
Gender, n (%)					
Male	42,529,363	2,390 (16.64)	0.96 (0.78, 1.18)	0.7085	0.866
Female	45,529,608	2,757 (36.92)	0.98 (0.82, 1.16)	0.8186	

(Cont'd...)

Table S2. Continued

Parameter	No. of participants	Statistics	Odds ratio (95% CI)	p-value	p for interaction
25-hydroxyvitamin D2 (nmol/L)					
Race/Hispanic origin, n (%)					0.127
Mexican American	6,040,999	616 (14.42)	1.04 (0.95, 1.14)	0.3867	
Other Hispanic	4,215,291	430 (18.56)	1.01 (0.95, 1.07)	0.711	
Non-Hispanic White	32,059,958	1,661 (22.72)	0.98 (0.95, 1.01)	0.133	
Non-Hispanic Black	6,817,406	1,004 (20.90)	1.00 (0.98, 1.03)	0.7866	
Other race	5,523,926	853 (17.74)	1.03 (0.98, 1.08)	0.232	
Education level, n (%)					0.069
Less than 9th grade	1,537,567	166 (8.29)	1296752.41 (62292.61, inf.)	<0.0001	
9–11th grade (Includes 12th grade with no diploma)	4,546,313	490 (9.11)	1.28 (0.62, 2.63)	0.5027	
High school graduate/GED or equivalent	12,266,772	1,016 (18.32)	0.99 (0.96, 1.03)	0.6049	
Some college or AA degree	19,385,331	1,685 (24.44)	0.98 (0.95, 1.00)	0.1099	
College graduate or above	16,913,311	1,206 (22.57)	1.03 (0.98, 1.08)	0.2972	
Gender, n (%)					0.176
Male	26,276,097	2,141 (9.61)	1.04 (0.96, 1.13)	0.3646	
Female	28,381,483	2,423 (31.07)	0.99 (0.97, 1.01)	0.4362	
25-hydroxyvitamin D3 (nmol/L)					
Race/Hispanic origin, n (%)					0.507
Mexican American	6,040,999	616 (14.42)	0.99 (0.97, 1.00)	0.1651	
Other Hispanic	4,215,291	430 (18.56)	1.00 (0.98, 1.01)	0.7488	
Non-Hispanic White	32,059,958	1,661 (22.72)	1.00 (0.99, 1.01)	0.7462	
Non-Hispanic Black	6,817,406	1,004 (20.90)	0.99 (0.98, 1.00)	0.0515	
Other race	5,523,926	853 (17.74)	0.99 (0.98, 1.01)	0.3395	
Education level, n (%)					0.787
Less than 9th grade	1,537,567	166 (8.29)	0.98 (0.95, 1.01)	0.2107	
9–11th grade (Includes 12th grade with no diploma)	4,546,313	490 (9.11)	1.00 (0.99, 1.02)	0.7287	
High school graduate/GED or equivalent	12,266,772	1,016 (18.32)	1.00 (0.99, 1.01)	0.5651	
Some college or AA degree	19,385,331	1,685 (24.44)	1.00 (0.99, 1.00)	0.2438	
College graduate or above	16,913,311	1,206 (22.57)	1.00 (0.99, 1.00)	0.3955	
Gender, n (%)					0.359
Male	26,276,097	2,141 (9.61)	0.99 (0.98, 1.00)	0.205	
Female	28,381,483	2,423 (31.07)	1.00 (0.99, 1.00)	0.4003	

(Cont'd...)

**Table S2. Continued**

Parameter	No. of participants	Statistics	Odds ratio (95% CI)	p-value	p for interaction
25-hydroxyvitamin D2 + D3 (nmol/L)					
Race/Hispanic origin, <i>n</i> (%)					0.672
Mexican American	6,040,999	616 (14.42)	0.99 (0.98, 1.00)	0.1966	
Other Hispanic	4,215,291	430 (18.56)	1.00 (0.98, 1.01)	0.7768	
Non-Hispanic White	32,059,958	1,661 (22.72)	1.00 (0.99, 1.00)	0.5545	
Non-Hispanic Black	6,817,406	1,004 (20.90)	0.99 (0.98, 1.00)	0.0519	
Other race	5,523,926	853 (17.74)	1.00 (0.98, 1.01)	0.4636	
Education level, <i>n</i> (%)					0.665
Less than 9th grade	1,537,567	166 (8.29)	0.98 (0.95, 1.01)	0.2286	
9–11th grade (Includes 12th grade with no diploma)	4,546,313	490 (9.11)	1.00 (0.99, 1.02)	0.6135	
High school graduate/GED or equivalent	12,266,772	1,016 (18.32)	1.00 (0.99, 1.01)	0.5368	
Some college or AA degree	19,385,331	1,685 (24.44)	0.99 (0.99, 1.00)	0.0878	
College graduate or above	16,913,311	1,206 (22.57)	1.00 (0.99, 1.00)	0.5153	
Gender, <i>n</i> (%)					0.451
Male	26,276,097	2,141 (9.61)	0.99 (0.98, 1.00)	0.2413	
Female	28,381,483	2,423 (31.07)	1.00 (0.99, 1.00)	0.2715	

Notes: ‘No. of participants’ indicates NHANES survey-weighted population estimates presented as whole numbers (no decimals). ‘Statistics’ indicates the unweighted sample size *n* with the survey-weighted percentage in parentheses.

Abbreviations: AA: Associate of arts; CI: Confidence interval; GED: General Educational Development; HDL: High-density lipoprotein; LDL: Low-density lipoprotein; RBC: Red blood cell; TIBC: Total iron-binding capacity; UIBC: Unsaturated iron-binding capacity.