

SUPPLEMENTARY DATA

Supplementary Table 1. Hardy-Weinberg equilibrium of patients and controls from Georgia samples.

Gene	SNP	Allele (Major>Minor)	HWE Cases	HWE Controls
VDBP	rs4588	C>A	0.2897	0.6740
VDBP	rs7041	G>T	0.8386	0.4072

Supplementary Table 2. Association analysis of VDBP SNPs rs7041 (G>T) and rs4588 (C>A) after stratification for sex, onset of type 1 diabetes, and HLA risk.

SNP	Subset	Genotype	Type 1 Diabetic Patients	Controls	Odds Ratio (95% CI)	<i>P</i>
rs7041	Early Onset	GG	285 (30.94%)	579 (31.67%)	1.00 (reference)	
		GT	474 (51.47%)	884 (48.36%)	1.09 (0.91-1.31)	0.3527
		TT	162 (17.59%)	365 (19.97%)	0.90 (0.71-1.14)	0.3842
		GT + TT	636 (69.06%)	1249 (68.33%)	1.03 (0.87-1.23)	0.6974
	Late Onset	GG	152 (29.23%)	579 (31.67%)	1.00 (reference)	
		GT	245 (47.12%)	884 (48.36%)	1.06 (0.84-1.33)	0.6409
		TT	123 (23.65%)	365 (19.97%)	1.28 (0.98-1.68)	0.0710
		GT + TT	368 (70.77%)	1249 (68.33%)	1.12 (0.91-1.39)	0.2884
	Male	GG	212 (30.55%)	302 (31.10%)	1.00 (reference)	
		GT	343 (49.42%)	483 (49.74%)	1.01 (0.81-1.27)	0.9193
		TT	139 (20.03%)	186 (19.16%)	1.07 (0.80-1.41)	0.6629
		GT + TT	482 (69.45%)	669 (68.90%)	1.03 (0.83-1.27)	0.8092
	Female	GG	229 (30.13%)	277 (32.32%)	1.00 (reference)	
		GT	380 (50.00%)	401 (46.79%)	1.15 (0.92-1.44)	0.2329
		TT	151 (19.87%)	179 (20.89%)	1.02 (0.77-1.35)	0.8870
		GT + TT	531 (69.87%)	580 (67.68%)	1.11 (0.90-1.37)	0.3431
rs4588	High Risk HLA	GG	244 (33.15%)	58 (29.44%)	1.00 (reference)	
		GT	346 (47.01%)	99 (50.25%)	0.83 (0.58-1.20)	0.3166
		TT	146 (19.84%)	40 (20.30%)	0.87 (0.55-1.36)	0.5379
		GT + TT	492 (66.85%)	139 (70.56%)	0.84 (0.60-1.19)	0.3228
	Low Risk HLA	GG	195 (27.50%)	520 (31.90%)	1.00 (reference)	
		GT	373 (52.61%)	785 (48.16%)	1.27 (1.03-1.56)	0.0239
		TT	141 (19.89%)	325 (19.94%)	1.16 (0.89-1.50)	0.2665
		GT + TT	514 (72.50%)	1110 (68.10%)	1.24 (1.02-1.50)	0.0338
	Early Onset	CC	472 (52.10%)	929 (51.58%)	1.00 (reference)	
		CA	350 (38.63%)	734 (40.76%)	0.94 (0.79-1.11)	0.4612
		AA	84 (9.27%)	138 (7.66%)	1.20 (0.89-1.61)	0.2263
		CA + AA	434 (47.90%)	872 (48.42%)	0.98 (0.83-1.15)	0.8004
	Late Onset	CC	244 (47.38%)	929 (51.58%)	1.00 (reference)	

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		CA	225 (43.69%)	734 (40.76%)	1.17 (0.95-1.43)	0.1401
		AA	46 (8.93%)	138 (7.66%)	1.27 (0.88-1.82)	0.1964
		CA + AA	271 (52.62%)	872 (48.42%)	1.18 (0.97-1.44)	0.0924
	Male	CC	340 (49.78%)	487 (50.78%)	1.00 (reference)	
		CA	281 (41.14%)	401 (41.81%)	1.00 (0.82-1.23)	0.9718
		AA	62 (9.08%)	71 (7.40%)	1.25 (0.87-1.81)	0.2324
		CA + AA	343 (50.22%)	472 (49.22%)	1.04 (0.86-1.27)	0.6891
	Female	CC	383 (51.07%)	442 (52.49%)	1.00 (reference)	
		CA	297 (39.60%)	333 (39.55%)	1.03 (0.84-1.27)	0.7855
		AA	70 (9.33%)	67 (7.96%)	1.21 (0.84-1.73)	0.3105
		CA + AA	367 (48.93%)	400 (47.51%)	1.06 (0.87-1.29)	0.5694
	High Risk HLA	CC	381 (52.62%)	98 (50.26%)	1.00 (reference)	
		CA	272 (37.57%)	80 (41.03%)	0.87 (0.62-1.22)	0.4310
		AA	71 (9.81%)	17 (8.72%)	1.07 (0.61-1.91)	0.8067
		CA + AA	343 (47.38%)	97 (49.74%)	0.91 (0.66-1.25)	0.5569
	Low Risk HLA	CC	337 (48.01%)	829 (51.68%)	1.00 (reference)	
		CA	304 (43.30%)	654 (40.77%)	1.14 (0.95-1.38)	0.1573
		AA	61 (8.69%)	121 (7.54%)	1.24 (0.89-1.73)	0.2044
		CA + AA	365 (52.00%)	775 (48.32%)	1.16 (0.97-1.38)	0.1041

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Supplementary Table 3. Heterogeneity tests to determine whether the odds ratios for homozygous genotypes significantly differ between stratified groups.

SNP	Subset	Genotype Analyzed	Odds Ratio (95% CI)	Heterogeneity
rs7041	Early Onset	GG > TT	0.90 (0.71-1.14)	0.0529
	Late Onset	GG > TT	1.28 (0.98-1.68)	
	Male	GG > TT	1.07 (0.80-1.41)	0.8338
	Female	GG > TT	1.02 (0.77-1.35)	
	High Risk HLA	GG > TT	0.87 (0.55-1.36)	0.2778
	Low Risk	GG > TT	1.16 (0.89-1.50)	
rs4588	Early Onset	CC > AA	1.20 (0.89-1.61)	0.8084
	Late Onset	CC > AA	1.27 (0.88-1.82)	
	Male	CC > AA	1.25 (0.87-1.81)	0.8891
	Female	CC > AA	1.21 (0.84-1.73)	
	High Risk HLA	CC > AA	1.07 (0.61-1.91)	0.6713
	Low Risk	CC > AA	1.24 (0.89-1.73)	

Odds ratio of patients with type 1 diabetes to controls. Heterogeneity determined by Breslow-Day test.

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Supplementary Figure 1. Serum levels of vitamin D binding protein do not correlate with age in females. Linear regression analysis shows no correlation between VDBP levels and age in females from all study cohorts (n=235).

