

Supplementary Table 1. Mendelian randomization estimates using MR-Egger and weighted median approach

Disease	MR-Egger		Weighted median
	Intercept <i>P</i> value ^a	Slope OR (95% CI) ^b	OR (95% CI) ^c
BE	0.793	1.32 (0.59-2.98)	1.12 (0.67-1.88)
EAC	0.749	0.60 (0.22-1.61)	0.66 (0.36-1.23)

^aThe *P*-value of the intercept is as a valid test of directional pleiotropy.

^bThe slope of the MR-Egger regression is the pleiotropy-adjusted causal effect estimate.

^cThe OR represent increase/decrease of risk per 20 nmol/L increase of 25(OH)D.

Supplementary Table 2. Associations of the 25(OH)D-associated SNPs with other phenotypes

SNP	Chr	Gene	Phenotype	Beta	P	PMID
rs10741657	11	<i>CYP2R1</i>	Hip circumference	0.015	1.10E-03	25673412
			Height	0.009	2.00E-03	25282103
			Conscientiousness	0.232	2.22E-03	21173776
rs10745742	12	<i>AMDHD1</i>	log(eGFR creatinine in non diabetics)	-0.003	2.60E-03	26831199
			Subject well being	-0.011	1.28E-03	27089181
			2 hour fasting glucose	-0.055	3.58E-03	20081857
			Birthweight	0.022	9.10E-03	23202124
			Visual refractive error	0.089	9.22E-03	23474815
			Extraversion	-0.014	1.24E-02	26362575
			Total cholesterol	NA	1.66E-02	20339536
rs12785878	11	<i>DHCR7</i>	Attention deficit hyperactivity disorder	NA	4.03E-05	20732625
			Waist hip ratio in males \leq 50 years	0.025	9.00E-03	26426971
			Total cholesterol	-0.014	1.41E-02	24097068
rs17216707	20	<i>CYP24A1</i>	log(eGFR creatinine)	0.002	1.70E-02	26831199
			log(eGFR creatinine)	0.008	6.00E-13	26831199
			Serum creatinine	NA	8.90E-06	20383146
			Femoral neck bone mineral density	NA	8.26E-04	22504420
			Cystatin C in serum	NA	7.50E-03	20383146
rs3755967	4	<i>GC</i>	Type II diabetes	0.049	1.10E-02	24509480
			Height	-0.009	4.90E-03	25282103
			log(Proinsulin)	-0.021	6.14E-03	21873549
			Alzheimers disease	0.036	3.35E-02	24162737
			Waist hip ratio in males \leq 50 years	-0.017	3.60E-02	26426971
			Chronic kidney disease	NA	3.60E-02	20383146
rs8018720	14	<i>SEC23A</i>	Years of educational attainment	0.009	3.63E-02	23722424
			Rheumatoid arthritis	0.083	8.43E-03	20453842
			Hip circumference in males	0.02	2.10E-02	25673412
			Waist hip ratio tails	-0.1	3.20E-02	23563607
			Tardive dyskinesia	NA	3.63E-02	19875103
			Gout	-0.087	4.22E-02	23263486
			Body fat percentage	-0.014	4.40E-02	26833246
			Simpson Angus Scale	NA	4.47E-02	19875103
log(DI)	0.055	4.62E-02	24699409			