

Supplementary Table 1. Descriptive Characteristics of study participants stratified by insomnia symptoms.

Characteristics		Insomnia symptoms	
N		Never/sometimes (143,671)	Usually (62,996)
P value*			
Continuous variables, mean (SD)			
Age, y		57.2 (8.1)	58.2 (7.5)
Townsend deprivation index, score		-1.6 (2.9)	-1.4 (3.1)
Physical activity, h/w		3.6 (2.3)	3.5 (2.4)
Sleep duration, h		7.4 (1.0)	6.7 (1.2)
Body mass index, kg/m ²		27.5 (4.7)	28.0 (5.1)
Total cholesterol concentration, mmol/L		5.6 (1.1)	5.7 (1.2)
LDL cholesterol, mmol/L		3.5 (0.9)	3.5 (0.9)
Categorical variables, N(%)			
Sex, female		77,102 (53.7)	39,401 (62.5)
Education, hold college/university degree		45,204 (31.7)	16,192 (25.9)
Alcohol intake, daily or almost daily		30,707 (21.4)	13,431 (21.3)
Smoking status,N(%)	Never	78,156 (54.6)	31,860 (50.8)
	Former	51,364 (35.9)	24,306 (38.7)
	Current	13,652 (9.5)	6,591 (10.5)
Comorbidity, %	Diabetes	6960 (4.8)	3878 (6.2)
	Hypertension	45,509 (31.7)	22,318 (35.4)
	Heart attack	3631 (2.5)	1980 (3.1)
	Angina	4699 (3.3)	2876 (4.6)
Medication use, %	Antihypertensive	38,066 (26.6)	18,112 (28.9)
	statin	27,840 (19.4)	13,555 (21.5)
	insulin	1687 (1.2)	810 (1.3)
Chronotype, %	definitely morning	33,803 (26.3)	15,430 (27.2)
	mild morning	47,048 (36.6)	20,023 (35.3)
	mild evening	37,232 (28.9)	15,716 (27.7)
	definitely evening	10,607 (8.2)	5535 (9.8)

Self-reported insomnia symptoms with the covariates. Mean ± standard deviation or N (%). P-values: Chi- square test or linear regression.

Supplementary Table 2. Demographics of the subgroups with different *HMGR* alleles.

Characteristics		HMGCR rs17238484			HMGCR rs12916		
N		TT (10,637)	GT (72,217)	GG (123,860)	CC (33,254)	CT (99,520)	TT (74,027)
Continuous variables, mean (SD)							
Age, years		57.7 (7.8)	57.5 (7.9)	57.5 (7.9)	57.7 (7.8)	57.5 (7.9)	57.4 (7.9)
Townsend deprivation index, score		-1.61 (2.9)	-1.6 (2.9)	-1.6 (2.9)	-1.6 (2.9)	-1.6 (2.9)	-1.5 (2.9)
Physical activity, hours/day		3.6 (2.3)	3.6 (2.3)	3.6 (2.3)	3.6 (2.3)	3.6 (2.3)	3.6 (2.3)
Sleep duration, hours/day		7.2 (1.1)	7.2 (1.1)	7.2 (1.1)	7.2 (1.1)	7.2 (1.1)	7.2 (1.1)
Body mass index		27.4 (4.7)	27.6 (4.8)	27.7 (4.9)	27.5 (4.8)	27.6 (4.8)	27.7 (4.9)
Total cholesterol, mmol/L		5.7 (1.2)	5.7 (1.2)	5.6 (1.1)	5.7 (1.2)	5.7 (1.2)	5.6 (1.1)
LDL cholesterol, mmol/L		3.6 (0.9)	3.6 (0.9)	3.5 (0.9)	3.6 (0.9)	3.5 (0.9)	3.5 (0.9)
Categorical variables, N(%)							
Sex, female		6009 (56.5)	40,475 (56.0)	70,009 (56.5)	18,616 (56.0)	56,082 (56.4)	41,847 (56.5)
Education, hold college/university degree		3232 (30.6)	21,548 (30.0)	36,622 (29.8)	9962 (30.2)	29,704 (30.0)	21,764 (29.6)
Alcohol intake, daily or almost daily		2284 (21.5)	15,617 (21.6)	26,247 (21.2)	7199 (21.7)	21,330 (21.4)	15,634 (21.1)
Smoking	Never	5706 (53.8)	38,554 (53.6)	65,776 (53.3)	17,708 (53.4)	53,136 (53.6)	39,236 (53.2)
	Former	3909 (36.9)	26,425 (36.7)	45,351 (36.8)	12,255 (37.0)	36,297 (36.6)	27,168 (36.8)
	Current	984 (9.3)	6986 (9.7)	12,277 (9.9)	3172 (9.6)	9728 (9.8)	7355 (10.0)
Comorbidity	Diabetes	567 (5.3)	3643 (5.0)	6634 (5.4)	1730 (5.20)	5116 (5.1)	4004 (5.4)
	Hypertension	3407 (32.0)	23,901 (33.1)	40,539 (32.7)	11,023 (33.1)	32,650 (32.8)	24200 (32.7)
	Heart attack	316 (3.0)	1996 (2.8)	3304 (2.7)	971 (2.9)	2678 (2.7)	1967 (2.7)
	Angina	420 (3.9)	2662 (3.7)	4499 (3.6)	1281 (3.9)	3654 (3.7)	2648 (3.6)
Medications	Antihypertensive	2862 (27.1)	19,759 (27.4)	33,577 (27.3)	9122 (27.6)	27,007 (27.3)	20,091 (27.3)
	statin	2293 (21.6)	14,857 (20.6)	24,266 (19.6)	7180 (21.6)	20,045 (20.1)	14,204 (19.2)
	insulin	143 (1.4)	828 (1.2)	1525 (1.2)	430 (1.3)	1158 (1.2)	911 (1.2)
Chronotype	Definitely morning	2488 (26.0)	17,410 (24.1)	29,331 (26.4)	7927 (26.5)	23,961 (26.8)	17,366 (26.2)
	Mild morning	3520 (36.7)	23,330 (36.0)	40,206 (36.2)	10,900 (36.5)	32,155 (36.0)	24,030 (36.3)
	Mild evening	2772 (28.9)	18,437 (28.5)	31,735 (28.6)	8514 (28.5)	25,401 (28.4)	19,053 (28.8)
	Definitely evening	806 (8.4)	5606 (8.7)	9751 (8.8)	2547 (8.5)	7844 (8.8)	5776 (8.7)

Continuous variables are presented as Mean (SD: standard deviation) and categorical variables are presented as N (%).

Supplementary Table 3. Demographics of the subgroups with different *PCSK9* alleles.

Characteristics		<i>PCSK9</i> rs11591147		
<i>N</i>		GG (199,690)	TG (7050)	TT (61)
Continuous variables, mean (SD)				
Age, years		57.5 (7.9)	57.6 (7.9)	57.9 (7.6)
Townsend deprivation index, score		-1.6 (2.9)	-1.5 (3.0)	-1.1 (3.2)
Physical activity, hours/day		3.6 (2.3)	3.6 (2.3)	3.7 (2.5)
Sleep duration, hours/day		7.2 (1.1)	7.2 (1.1)	7.2 (1.2)
Body mass index		27.6 (4.8)	27.7 (4.9)	27.8 (4.9)
Total cholesterol, mmol/L		5.7 (1.2)	5.3 (1.1)	4.9 (1.2)
LDL cholesterol, mmol/L		3.5 (0.9)	3.3 (0.8)	2.8 (0.9)
Categorical variables, N(%)				
Sex, female		112,445 (56.3)	4062 (57.6)	38 (62.3)
Education, hold college/university degree		59,400 (29.9)	2014 (28.8)	16 (26.7)
Alcohol intake, daily or almost daily		42,675 (21.4)	1473 (20.9)	15 (24.6)
Smoking	Never	10,6273 (53.4)	3772 (53.7)	35 (57.4)
	Former	73,132 (36.8)	2563 (36.5)	25 (41.0)
	Current	19,560 (9.8)	694 (9.9)	1 (1.6)
Comorbidity	Diabetes	10,462 (4.3)	382 (5.4)	6 (9.8)
	Hypertension	65,531 (32.8)	2324 (33.0)	18 (29.5)
	Heart attack	5463 (2.7)	153 (1.5)	0 (0.0)
	Angina	7375 (3.7)	206 (2.9)	2 (3.3)
Medications	Antihypertensive	54,277 (27.3)	1928 (27.5)	15 (25.4)
	Statin	40,423 (20.2)	997 (14.1)	9 (14.8)
	Insulin	2414 (1.2)	85 (1.2)	0 (0.0)
Chronotype	definitely morning	47,600 (26.6)	1643 (26.1)	11 (19.6)
	mild morning	64,808 (36.2)	2256 (35.8)	21 (37.5)
	mild evening	51,160 (28.6)	1787 (28.3)	21 (37.5)
	definitely evening	15,546 (8.7)	618 (9.8)	3 (5.4)

Continuous variables are presented as Mean (SD: standard deviation) and categorical variables are presented as N (%).