

Table 1. Estimated^a Mean and Adjusted^a Proportions of Baseline Characteristics by Serum 25(OH)D Levels Among Participants (n = 192,908)

Characteristics	Serum 25(OH)D Levels (nmol/L)				p-Trend
	<25	25-<50	50-<75	≥75	
Number of participants	31,224	109,197	42,200	10,287	
Age (years)	37.3 (37.2-37.4)	37.5 (37.5-37.6)	38.6 (38.5-38.6)	40.0 (39.8-40.1)	<0.001
Male (%)	35.27 (34.74-35.80)	56.68 (56.38-56.97)	66.27 (65.81-66.72)	59.94 (58.99-60.89)	<0.001
Alcohol intake (%) ^b	14.50 (14.05-14.94)	18.78 (18.55-19.00)	23.31 (22.94-23.68)	25.69 (24.89-26.49)	<0.001
Current smoker (%)	15.10 (14.63-15.57)	16.75 (16.54-16.95)	19.28 (18.96-19.61)	20.09 (19.39-20.78)	<0.001
HEPA (%)	11.06 (10.70-11.42)	13.58 (13.38-13.79)	17.00 (16.64-17.36)	19.73 (18.96-20.50)	<0.001
Education level (%) ^c	82.92 (82.51-83.33)	84.95 (84.74-85.16)	85.33 (84.98-85.67)	85.16 (84.48-85.84)	<0.001
History of diabetes (%)	1.61 (1.44-1.77)	1.83 (1.75-1.91)	1.83 (1.71-1.94)	1.76 (1.55-1.96)	0.336
History of hypertension (%)	5.79 (5.49-6.10)	6.02 (5.88-6.16)	6.19 (5.99-6.40)	6.40 (5.99-6.81)	0.006
History of CVD (%)	0.81 (0.70-0.93)	0.84 (0.78-0.89)	0.80 (0.72-0.88)	0.86 (0.71-1.01)	0.986
Anti-lipid medication use (%)	1.98 (1.80-2.16)	1.80 (1.72-1.88)	1.73 (1.62-1.84)	1.97 (1.76-2.18)	0.507
Multivitamin supplement (%)	3.49 (3.29-3.69)	6.05 (5.91-6.19)	10.42 (10.13-10.72)	14.95 (14.28-15.62)	<0.001
Vitamin D supplement (%)	0.21 (0.17-0.26)	0.62 (0.57-0.66)	1.74 (1.61-1.87)	4.79 (4.38-5.19)	<0.001
Calcium supplement (%)	0.20 (0.16-0.25)	0.38 (0.35-0.42)	0.98 (0.87-1.08)	2.12 (1.85-2.39)	<0.001
Obesity (%) ^d	19.42 (18.94-19.91)	21.49 (21.26-21.72)	22.49 (22.14-22.84)	19.22 (18.53-19.92)	<0.001
Body mass index (kg/m ²)	22.5 (22.5-22.6)	22.7 (22.7-22.7)	22.8 (22.8-22.8)	22.5 (22.4-22.5)	<0.001
SBP (mmHg)	107.0 (106.9-107.1)	107.5 (107.5-107.6)	107.8 (107.7-107.9)	108.0 (107.8-108.2)	<0.001
DBP (mmHg)	68.8 (68.7-68.9)	69.3 (69.2-69.3)	69.5 (69.5-69.6)	69.2 (69.1-69.4)	<0.001
Glucose (mg/dL)	93.2 (93.1-93.4)	93.5 (93.5-93.6)	93.6 (93.5-93.7)	93.1 (92.9-93.3)	0.191
Total cholesterol (mg/dL)	188.0 (187.6-188.3)	191.1 (190.9-191.3)	191.8 (191.5-192.1)	190.6 (190.0-191.3)	<0.001
GGT (U/L)	26.4 (26.0-26.8)	28.1 (27.9-28.3)	30.3 (30.0-30.6)	29.9 (29.3-30.6)	<0.001
ALT (U/L)	21.5 (21.3-21.7)	22.0 (21.9-22.1)	22.5 (22.3-22.6)	22.6 (22.3-23.0)	<0.001
HOMA-IR	1.45 (1.43-1.46)	1.44 (1.44-1.45)	1.43 (1.42-1.44)	1.33 (1.32-1.35)	<0.001
hsCRP (mg/L)	0.90 (0.87-0.93)	0.91 (0.89-0.93)	0.94 (0.91-0.97)	0.94 (0.88-1.00)	<0.001
Total energy intake (kcal/d) ^{e, f}	1,450.6 (1,442.2-1,458.9)	1,446.5 (1,442.2-1,450.9)	1,434.7 (1,427.6-1,441.7)	1,411.7 (1,397.4-1,426.1)	<0.001

^a Adjusted for age and sex; ^b ≥20 g/day; ^c ≥College graduate; ^d Body mass index ≥25 kg/m²; ^e among 132,466 participants with plausible estimated energy intake levels (within three standard deviations from the log-transformed mean energy intake); ^f 1 kcal equals to 4,185.8 J

Abbreviations: ALT, alanine aminotransferase; CVD, cardiovascular disease; DBP, diastolic blood pressure; GGT, gamma-glutamyltransferase; HEPA, health-enhancing physically active; hsCRP, high-sensitivity C-reactive protein; HOMA-IR, homeostasis model assessment of insulin resistance; SBP, systolic blood pressure