

Supplementary 1

Table 1. Baseline Characteristics of study in participants with diabetes alone and with CKD alone

Characteristic	Total	Vitamin D supplement nonusers	Vitamin D supplement users	P value
With diabetes alone				
N of participants	11743	11341	402	
Age (years)	59.05 ± 7.17	59.03 ± 7.17	59.56 ± 7.23	0.145
Male sex	7248 (61.7)	7066 (62.3)	182 (45.3)	<0.001
White race	10561 (89.9)	10231 (90.2)	330 (82.1)	<0.001
Education				0.055
Low	2679 (22.8)	2602 (22.9)	77 (19.2)	
Intermediate	5895 (50.2)	5697 (50.2)	198 (49.3)	
High	3169 (27.0)	3042 (26.8)	127 (31.6)	
Townsend deprivation index	-0.82 ± 3.27	-0.83 ± 3.26	-0.36 ± 3.50	0.004
BMI (kg/m2)	30.97 ± 5.77	31.00 ± 5.76	30.28 ± 6.01	0.014
Drinking frequency				<0.001
Never	1561 (13.3)	1466 (12.9)	95 (23.6)	
Less than twice a week	6237 (53.1)	6041 (53.3)	196 (48.8)	
More than three times a week	3945 (33.6)	3834 (33.8)	111 (27.6)	
Smoking status				0.095
Never	51 (0.4)	49 (0.4)	2 (0.5)	
Previous	5657 (48.2)	5439 (48.0)	218 (54.2)	
Current	4877 (41.5)	4732 (41.7)	145 (36.1)	
Active physical activity	5083 (43.3)	4897 (43.2)	186 (46.3)	0.239
Cumulative dietary risk factors	4.94 ± 1.55	4.95 ± 1.55	4.49 ± 1.49	<0.001
Sleep duration (> 7h/d)	8625 (73.4)	8340 (73.5)	285 (70.9)	0.262
Falls in the last years	2712 (23.1)	2588 (22.8)	124 (30.8)	<0.001

Fractured/broken bones in last 5 years		1037 (8.8)	981 (8.7)	56 (13.9)	<0.001
Characteristic		Total	Vitamin D supplement nonusers	Vitamin D supplement users	P value
HbA1c (<9%)		11078 (94.3)	10691 (94.3)	387 (96.3)	0.088
Diabetes duration (<10 years)		8536 (72.7)	8272 (72.9)	264 (65.7)	0.001
Insulin use (Yes)		2254 (19.2)	2172 (19.2)	82 (20.4)	0.533
With CKD alone					
N of participants		13231	12681	550	
Age (years)		58.08 ± 8.10	58.02 ± 8.12	59.51 ± 7.53	<0.001
Male sex		5897 (44.6)	5723 (45.1)	174 (31.6)	<0.001
White race		12041 (91.0)	11559 (91.2)	482 (87.6)	0.006
Education					0.289
Low		2589 (19.6)	2486 (19.6)	103 (18.7)	
Intermediate		6616 (50.0)	6353 (50.1)	263 (47.8)	
High		4026 (30.4)	3842 (30.3)	184 (33.5)	
Townsend deprivation index		-1.21 (3.13)	-1.23 (3.12)	-0.91 (3.28)	0.019
BMI (kg/m ²)		27.95 ± 5.33	28.01 ± 5.32	26.60 ± 5.39	<0.001
Drinking frequency					<0.001
	Never	1065 (8.0)	995 (7.8)	70 (12.7)	
	Less than twice a week	6560 (49.6)	6298 (49.7)	262 (47.6)	
	More than three times a week	5606 (42.4)	5388 (42.5)	218 (39.6)	
Smoking status					0.611
	Never	6992 (52.8)	6688 (52.7)	304 (55.3)	
	Previous	4585 (34.7)	4401 (34.7)	184 (33.5)	
	Current	1610 (12.2)	1549 (12.2)	61 (11.1)	
Active physical activity		6248 (47.2)	5947 (46.9)	301 (54.7)	<0.001
Cumulative dietary risk factors		5.02 ± 1.59	5.04 ± 1.58	4.51 ± 1.64	<0.001

Sleep duration (> 7h/d)	9964 (75.3)	9546 (75.3)	418 (76.0)	0.738
Falls in the last years	2673 (20.2)	2524 (19.9)	149 (27.1)	<0.001
Fractured/broken bones in last 5 years	1157 (8.7)	1078 (8.5)	79 (14.4)	<0.001
eGFR				<0.001
≥30 mL/min/1.73 m ²	13108 (99.1)	12573 (99.1)	535 (97.3)	
15-30 mL/min/1.73 m ²	92 (0.7)	84 (0.7)	8 (1.5)	
<15 mL/min/1.73 m ²	31 (0.2)	24 (0.2)	7 (1.3)	
ACR (<34 mg/mmol)	12445 (94.1)	11941 (94.2)	504 (91.6)	0.014

* Continuous variables with a normal distribution were described using mean ± SD, and non-normally distributed data were described with median and interquartile range. Categorical data were presented as percentages (%). †P difference in the baseline characteristic between vitamin D supplement users and nonusers in participants with diabetes alone and with CKD. HbA1c, glycated hemoglobin A1c; eGFR, estimated glomerular filtration rate; ACR, albumin-to-creatinine ratio.

Supplementary 2

Table 2. Stratified analysis of the associations (HR, 95%CI) between habitual vitamin D supplementation and all-cause and CVD mortality among individuals without diabetes or CKD, and with coexisting diabetes and CKD

	All-cause mortality				CVD mortality			
	Events/N	HR (95% CI)	P	P _{interaction}	Events/N	HR (95% CI)	P	P _{interaction}
Without diabetes or CKD								
Age (years)				0.547				0.278
<60	6176/201001	1.05 (0.91, 1.21)	0.534		1646/201001	1.27 (0.97, 1.66)	0.084	
≥60	13046/122812	1.00 (0.92, 1.08)	0.936		4240/122812	0.98 (0.84, 1.14)	0.782	
Sex				0.023				0.056
Female	8237/178467	0.93 (0.85, 1.03)	0.162		2129/178467	0.90 (0.74, 1.10)	0.315	
Male	10985/145346	1.12 (1.01, 1.25)	0.040		3757/145346	1.20 (1.01, 1.44)	0.044	
Falls in the last years				0.254				0.739
No	14827/265392	0.98 (0.90, 1.07)	0.618		4486/265392	1.04 (0.89, 1.22)	0.617	
Yes	4395/58421	1.09 (0.96, 1.25)	0.193		1400/58421	1.06 (0.83, 1.36)	0.643	
Fractured/broken bones in last 5 years				0.116				0.322
No	17214/293799	0.98 (0.91, 1.06)	0.671		5246/293799	1.02 (0.88, 1.18)	0.783	
Yes	2008/30014	1.18 (0.98, 1.41)	0.075		640/30014	1.19 (0.87, 1.65)	0.280	
With coexisting diabetes and CKD								
Age(years)				0.920				0.868
<60	139/755	1.87 (0.74, 4.75)	0.186		79/755	1.88 (0.55, 6.36)	0.313	
≥60	439/1275	1.65 (1.07, 2.53)	0.023		278/1275	1.71 (1.01, 2.91)	0.047	
Sex				0.434				0.699
Female	124/637	1.63 (0.76, 3.48)	0.211		71/637	1.65 (0.63, 4.34)	0.306	

Male	454/1393	1.98 (1.25, 3.12)	0.003		286/1393	1.96 (1.12, 3.46)	0.019	
Falls in the last years				0.709				0.421
No	421/1535	1.85 (1.19, 2.86)	0.006		256/1535	2.00 (1.15, 3.47)	0.014	
Yes	157/495	1.95 (0.82, 4.66)	0.133		101/495	1.28 (0.44, 3.70)	0.648	
Fractured/broken bones in last 5 years				0.274				0.934
No	525/1843	1.68 (1.10, 2.57)	0.017		323/1843	1.83 (1.08, 3.10)	0.025	
Yes	53/187	2.18 (0.77, 6.18)	0.141		34/187	1.76 (0.45, 6.89)	0.416	
HbA1c (%)				0.759				0.641
<9	493/1765	1.81 (1.20, 2.73)	0.005		293/1765	1.87 (1.11, 3.13)	0.018	
≥9	85/265	1.09 (0.32, 3.67)	0.895		64/265	1.19 (0.27, 5.28)	0.821	
Diabetes duration (years)				0.310				0.844
<10	305/1245	2.40 (1.44, 3.99)	0.001		169/1245	1.92 (0.96, 3.83)	0.065	
≥30	273/785	1.42 (0.76, 2.64)	0.27		188/785	1.56 (0.77, 3.15)	0.213	
eGFR (mL/min/1.73m²)				0.353				0.956
<30	34/56	7.30 (0.96, 55.67)	0.055		25/56	5.71 (0.48, 68.20)	0.169	
30-59	544/1974	1.75 (1.16, 2.64)	0.007		332/1974	1.83 (1.10, 3.06)	0.02	
ACR (mg/mmol)				0.613				0.367
<34	474/1801	1.71 (1.09, 2.69)	0.019		283/1801	2.04 (1.17, 3.53)	0.012	
≥34	104/229	1.94 (0.84, 4.48)	0.122		74/229	0.99 (0.33, 2.95)	0.99	
Insulin				0.647				0.807
No	386/1500	1.89 (1.19, 3.01)	0.007		227/1500	1.88 (1.04, 3.42)	0.037	
Yes	192/530	1.54 (0.74, 3.23)	0.25		130/530	1.68 (0.70, 4.01)	0.242	

HR (95%CI) was adjusted for age (continuous), sex (male or female), education level (high, intermediate and low) and Townsend deprivation index (continuous), alcohol intake frequency (never, less than 3 times/week, and ≥ 3 times/week), smoking status (never, past, or current), physical activity (inactive or active), cumulative dietary risk factors (0 to 9), sleep duration (< 7 hours/day or ≥ 7 hours/day), BMI (continuous), and hypertension (yes or no). The full model for individuals with both

diabetes and CKD was additionally adjusted for falls (yes or no), fractured (yes or no), insulin (yes or no), HbA1c (< 9 or $\geq 9\%$), duration of diabetes (< 10 or ≥ 10 years), eGFR (< 30 , or ≥ 30 ml/min/1.73m²) and ACR (< 34 or ≥ 34 mg/mmol).

* There were not enough cases to estimate HR (95%CI).

Supplementary 3

Table 3. Standardized mean differences of variables between the vitamin D supplemented and non-vitamin D-supplemented groups before and after propensity score matching

	Standardized Mean Difference*	
	With diabetes and CKD	Without diabetes or CKD
Age	-0.0033	0.0004
Sex	-0.0652	0.0012
Townsend deprivation index	0.0452	-0.0042
Race	0.0181	0.0028
Non-drinker	0.0694	-0.0016
Non-smoker	-0.0060	0.0050
Physical activity	-0.0181	-0.0006
Cumulative dietary risk factor score	0.0291	0.0032
Sleep duration	0.0145	0.0012
BMI	0.0791	-0.0039
Hypertension	0.0217	-0.0007
Fall	0.0326	-0.0006
Fractured	0.0471	0.0009
Insulin	0.0001	0.0001
Diabetes duration	-0.0169	-
HbA1c	-0.0015	-
eGFR	-0.0582	-
ACR	0.0971	-

* Standardized difference < 0.1 was considered to indicate good balance.

Supplementary 4**Table 4. Associations (HR, 95% CI) of habitual vitamin D supplementation with risk of all-cause and CVD mortality in the 1:4 propensity score-matched cohort**

	All-cause mortality	CVD mortality	Cancer mortality
Without diabetes or CKD			
Events/N	4371/68862	1296/68862	2359/68862
HR (95%CI)	0.96(0.89,1.03)	1.00(0.87,1.14)	0.86(0.78,0.96)
P	0.296	0.998	0.007
With diabetes and CKD			
Events/N	97/336	58/336	22/336
HR (95%CI)	2.06(1.31, 3.23)	2.11(1.19, 3.74)	0.54(0.16, 1.89)
P	0.001	0.010	0.340

*Propensity score matching of vitamin D supplement users and non-users was used to adjust for confounding factors including age, sex, Townsend deprivation index, education level, race, alcohol intake frequency, smoking status, physical activity, cumulative dietary risk factors, sleep duration, obesity, hypertension.

Supplementary 5

Table 5. The numbers (percentages) of participants with missing covariates

Covariates	Numbers	Percentage (%)
Townsend deprivation index	537	0.12%
BMI	2081	0.48%
Alcohol intake frequency	347	0.08%
Physical activity	880	0.20%
Race	1395	0.33%
Cumulative dietary risk factors	20140	4.69%
Sleep duration	2449	0.57%
eGFR	24262	5.65%
HbA1c	26867	6.26%

Supplementary 6

Table 6. Associations (HR, 95% CI) of habitual vitamin D supplementation with all-cause and specific mortality using multiple imputation

	All-cause mortality	CVD mortality	Cancer mortality
Without CKD or diabetes			
Events/N	23799/385281	7402/385281	12765/385281
HR (95%CI)	0.97(0.91,1.03)	1.02(0.91, 1.15)	0.87(0.79,0.96)
P	0.339	0.751	0.003
Diabetes alone			
Events/N	2825/19800	1310/19800	1197/19800
HR (95%CI)	1.29(1.07,1.56)	1.05(0.78,1.43)	1.31(0.99,1.74)
P	0.007	0.741	0.065
CKD alone			
Events/N	2662/20112	1125/20112	1285/22351
HR (95%CI)	1.03(0.86,1.23)	0.98(0.73,1.32)	1.09(0.83,1.43)
P	0.724	0.913	0.614
With CKD and diabetes			
Events/N	1031/3811	598/3811	293/3811
HR (95%CI)	1.89(1.43,2.49)	1.64(1.12,2.38)	1.25(0.70,2.24)
P	<0.001	0.010	0.458

HR (95%CI) was adjusted for age (continuous), sex (male or female), education level (high, intermediate and low) and Townsend deprivation index (continuous), alcohol intake frequency (never, less than 3 times/week, and ≥ 3 times/week), smoking status (never, past, or current), physical activity (inactive or active), cumulative dietary risk factors (0 to 9), sleep duration (< 7 hours/day or ≥ 7 hours/day), BMI (continuous), and hypertension (yes or no). The full model for individuals with both diabetes and CKD was additionally adjusted for falls (yes or no), fractured (yes or no), insulin (yes or no), HbA1c (< 9 or $\geq 9\%$), duration of diabetes (< 10 or ≥ 10 years), eGFR (< 30 , or ≥ 30 ml/min/1.73m²) and ACR (< 34 or ≥ 34 mg/mmol).

Supplementary 7

Table 7. Associations (HR, 95% CI) of habitual vitamin D supplementation with CVD and cancer mortality after considering competing risk of mortality for other causes*

	CVD mortality	Cancer mortality
Without coexisting diabetes and CKD		
HR (95%CI)	1.02(0.89,1.15)	0.86 (0.76,0.95)
P	0.790	0.002
Diabetes alone		
HR (95%CI)	1.07(0.73, 1.54)	1.45(1.04,2.02)
P	0.770	0.027
CKD alone		
HR (95%CI)	1.05(0.45, 2.43)	0.99(0.69, 1.44)
P	0.920	0.920
With coexisting diabetes and CKD		
HR (95%CI)	1.76(1.11, 2.78)	0.64(0.20, 2.07)
P	0.016	0.450

* For CVD mortality we controlled for non-CVD mortality as a competing event. For cancer mortality we controlled for non-cancer mortality as a competing event.

HR (95%CI) was adjusted for age (continuous), sex (male or female), education level (high, intermediate and low) and Townsend deprivation index (continuous), alcohol intake frequency (never, less than 3 times/week, and ≥ 3 times/week), smoking status (never, past, or current), physical activity (inactive or active), cumulative dietary risk factors (0 to 9), sleep duration (< 7 hours/day or ≥ 7 hours/day), BMI (continuous), and hypertension (yes or no). The full model for individuals with both diabetes and CKD was additionally adjusted for falls (yes or no), fractured (yes or no), insulin (yes or no), HbA1c (< 9 or $\geq 9\%$), duration of diabetes (< 10 or ≥ 10 years), eGFR (< 30 , or ≥ 30 ml/min/1.73m²) and ACR (< 34 or ≥ 34 mg/mmol).

Supplementary 8

Table 8. Associations (HR, 95% CI) of habitual vitamin D supplementation with risk of all-cause and CVD mortality stratified by medication use in participants with coexisting diabetes and CKD

	All-cause mortality				CVD mortality			
	Events/N	HR (95%CI)	P	P _{interaction}	Events/N	HR (95%CI)	P	P _{interaction}
Angiotensin-converting enzyme (ACE) inhibitors				0.321				0.523
No	278/1099	1.45 (0.84, 2.51)	0.188		168/1099	1.62 (0.82, 3.23)	0.167	
Yes	322/1012	2.34 (1.40, 3.93)	0.001		204/1012	2.36 (1.26, 4.43)	0.008	
Angiotensin receptor blockers				0.900				0.963
No	463/1676	1.80 (1.20, 2.70)	0.004		280/1676	1.98 (1.20, 3.26)	0.007	
Yes	137/435	1.38 (0.49, 3.83)	0.541		92/435	1.56 (0.47, 5.12)	0.466	
Beta-blockers				0.106				0.277
No	461/1724	1.62 (1.06, 2.45)	0.024		276/1724	1.70 (1.00, 2.89)	0.048	
Yes	139/387	3.92 (1.60, 9.60)	0.003		96/387	4.04 (1.42, 11.47)	0.009	
Metformin				0.897				0.622
No	260/852	1.73 (1.04, 2.87)	0.033		165/852	1.60 (0.86, 3.00)	0.139	
Yes	340/1259	1.86 (1.05, 3.28)	0.034		207/1259	2.02 (1.02, 4.03)	0.045	
Aspirin				0.440				0.150
No	266/1043	1.58 (0.93, 2.69)	0.091		159/1043	1.26 (0.61, 2.61)	0.537	
Yes	334/1068	2.23 (1.31, 3.80)	0.003		213/1068	2.76 (1.51, 5.03)	0.001	
Statin				0.891				0.441
No	147/530	1.82 (0.95, 3.48)	0.072		103/530	2.03 (0.98, 4.21)	0.058	
Yes	453/1581	1.77 (1.11, 2.83)	0.016		269/1581	1.69 (0.91, 3.11)	0.094	

HR (95%CI) was adjusted for age (continuous), sex (male or female), education level (high, intermediate and low) and Townsend deprivation index (continuous), alcohol intake frequency (never, less than 3 times/week, and ≥ 3 times/week), smoking status (never, past, or current), physical activity (inactive or active), cumulative

dietary risk factors (0 to 9), sleep duration (< 7 hours/day or ≥ 7 hours/day), BMI (continuous), and hypertension (yes or no). The full model for individuals with both diabetes and CKD was additionally adjusted for falls (yes or no), fractured (yes or no), insulin (yes or no), HbA1c (< 9 or $\geq 9\%$), duration of diabetes (< 10 or ≥ 10 years), eGFR (< 30 , or ≥ 30 ml/min/1.73m²) and ACR (< 34 or ≥ 34 mg/mmol).

Supplementary 9

Table 9. Associations (HR, 95% CI) of habitual vitamin D supplementation with all-cause and cause-specific mortality after excluding deaths that occurred within first 2 years of follow-up

	All-cause mortality	CVD mortality	Cancer mortality
Without diabetes or CKD			
Events/N	18480/323071	5643/323071	10165/323071
HR (95%CI)	0.97(0.90, 1.05)	1.01(0.88, 1.16)	0.89(0.80, 0.98)
P	0.459	0.856	0.024
Diabetes alone			
Events/N	1633/11664	758/11664	710/11664
HR (95%CI)	1.36(1.07, 1.72)	1.17(0.69, 1.54)	1.46(1.02,2.08)
P	0.013	0.893	0.045
CKD alone			
Events/N	1580/13139	678/13139	715/13139
HR (95%CI)	0.95(0.74, 1.23)	0.94(0.63, 1.39)	0.80(0.67, 1.45)
P	0.698	0.735	0.949
With diabetes and CKD			
Events/N	553/2005	343/2005	145/2005
HR (95%CI)	1.79(1.20, 2.65)	2.34(1.11, 2.96)	0.71(0.22, 2.24)
P	0.004	0.017	0.665

HR (95%CI) was adjusted for age (continuous), sex (male or female), education level (high, intermediate and low) and Townsend deprivation index (continuous), alcohol intake frequency (never, less than 3 times/week, and ≥ 3 times/week), smoking status (never, past, or current), physical activity (inactive or active), cumulative dietary risk factors (0 to 9), sleep duration (< 7 hours/day or ≥ 7 hours/day), BMI (continuous), and hypertension (yes or no). The full model for individuals with both diabetes and CKD was additionally adjusted for falls (yes or no), fractured (yes or no), insulin (yes or no), HbA1c (< 9 or $\geq 9\%$), duration of diabetes (< 10 or ≥ 10 years), eGFR (< 30 , or ≥ 30 ml/min/1.73m²) and ACR (< 34 or ≥ 34 mg/mmol).

Supplementary 10

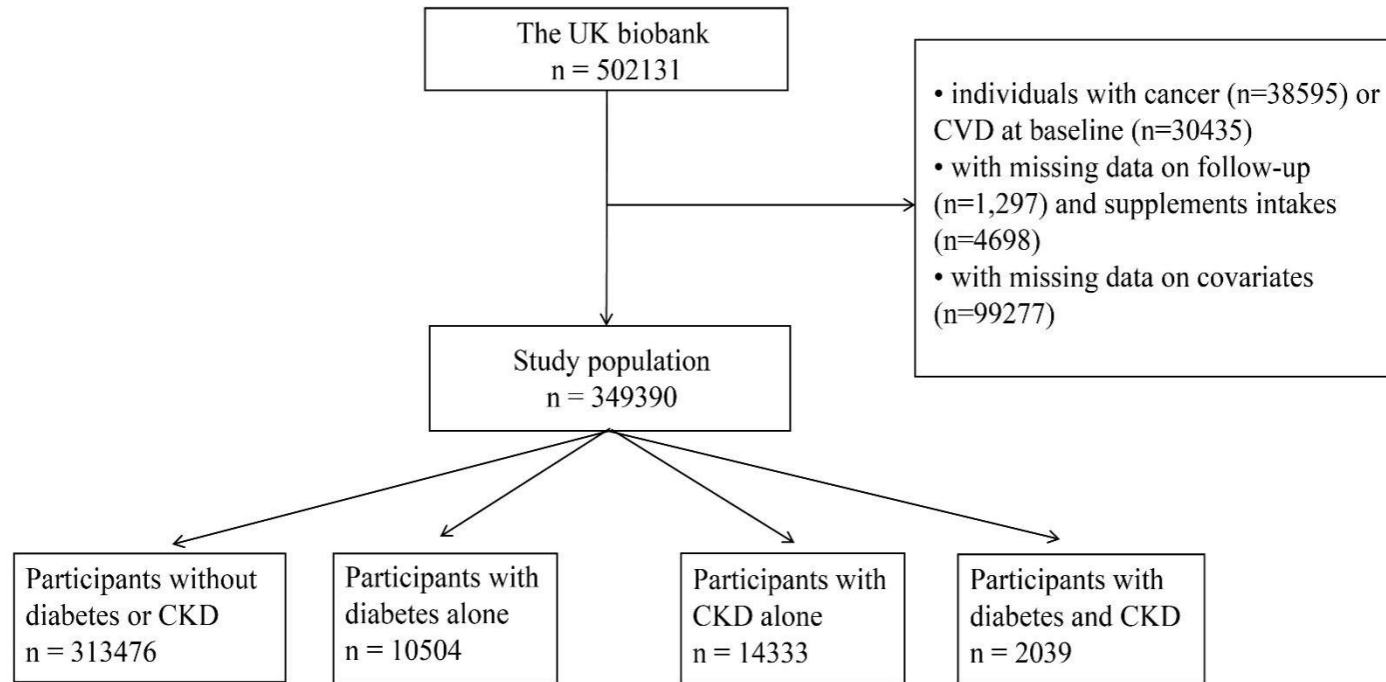
Table 10. Associations (HR, 95% CI) of habitual vitamin D supplementation with all-cause and cause-specific mortality using glucosamine and fish oil supplementation as active comparators

	All-cause mortality	CVD mortality	Cancer mortality
Using glucosamine as the active comparator			
Without diabetes or CKD			
Events/N	4366/71532	1261/71532	2465/71532
HR (95%CI)	1.06(0.98, 1.15)	1.14(0.98, 1.32)	0.91(0.82, 1.02)
P	0.129	0.075	0.112
Diabetes alone			
Events/N	277/2108	115/2108	134/2108
HR (95%CI)	1.71(1.30, 2.23)	1.59(1.03, 2.45)	1.63(1.10, 2.41)
P	<0.001	0.037	0.014
CKD alone			
Events/N	341/2892	138/2892	152/2892
HR (95%CI)	1.15(0.88, 1.50)	1.09(0.71, 1.68)	1.25(0.85, 1.85)
P	0.308	0.690	0.264
With diabetes and CKD			
Events/N	89/305	54/305	20/305
HR (95%CI)	1.96(1.17, 3.26)	2.40(1.23, 4.70)	1.04(0.25, 4.32)
P	0.010	0.010	0.958
Using fish oil as the active comparator			
Without diabetes or CKD			
Events/N	6876/105981	2106/105981	3797/105981
HR (95%CI)	1.00(0.93, 1.08)	1.02(0.88, 1.17)	0.88(0.79, 0.98)
P	0.952	0.801	0.022

Diabetes alone			
Events/N	585/3938	251/3938	272/3938
HR (95%CI)	1.39(1.09, 1.78)	1.13(0.76, 1.69)	1.41(0.98, 2.00)
P	0.006	0.531	0.057
CKD alone			
Events/N	598/4659	260/4659	263/4659
HR (95%CI)	1.06(0.83, 1.36)	0.89(0.59, 1.33)	1.19(0.83, 1.72)
P	0.628	0.581	0.343
With diabetes and CKD			
Events/N	180/599	112/599	44/599
HR (95%CI)	1.76(1.15, 2.69)	1.92(1.13, 3.28)	0.60(0.18, 2.03)
P	0.008	0.015	0.412

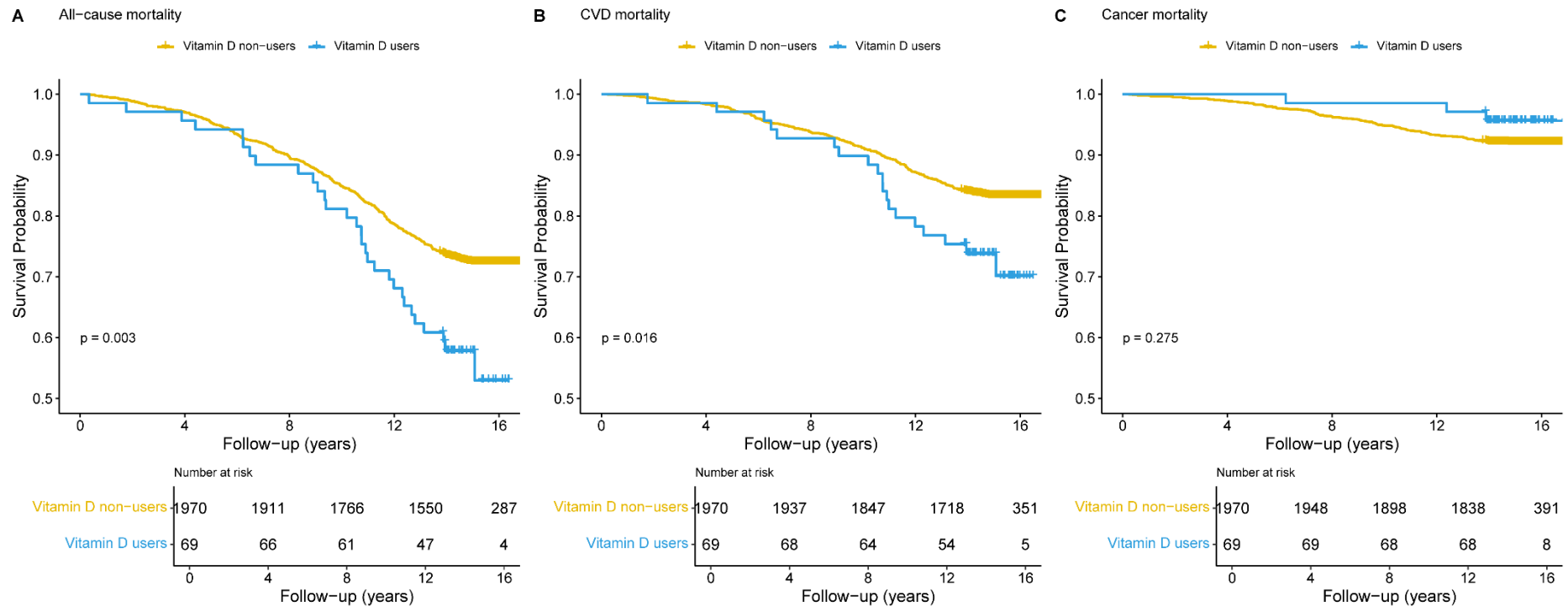
HR (95%CI) was adjusted for age (continuous), sex (male or female), education level (high, intermediate and low) and Townsend deprivation index (continuous), alcohol intake frequency (never, less than 3 times/week, and ≥ 3 times/week), smoking status (never, past, or current), physical activity (inactive or active), cumulative dietary risk factors (0 to 9), sleep duration (< 7 hours/day or ≥ 7 hours/day), BMI (continuous), and hypertension (yes or no). The full model for individuals with both diabetes and CKD was additionally adjusted for falls (yes or no), fractured (yes or no), insulin (yes or no), HbA1c (< 9 or $\geq 9\%$), duration of diabetes (< 10 or ≥ 10 years), eGFR (< 30 , or ≥ 30 ml/min/1.73m²) and ACR (< 34 or ≥ 34 mg/mmol).

Supplementary 11



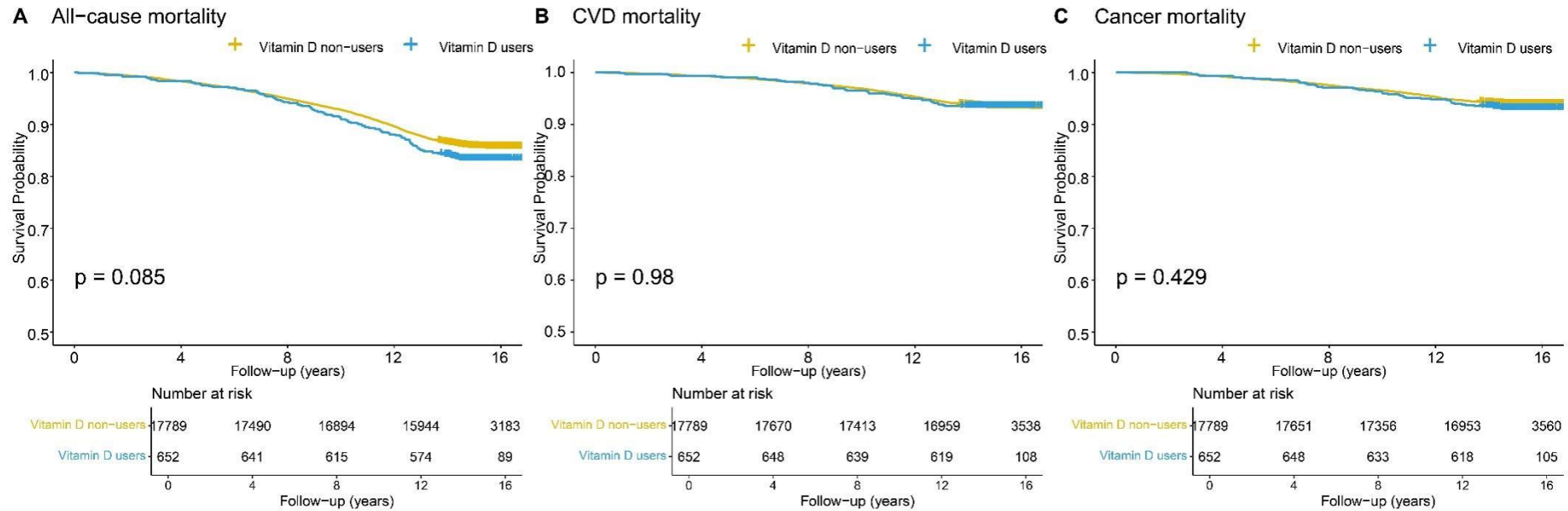
Supplementary Figure 1. Flowchart of participants included in the analysis.

Supplementary 12



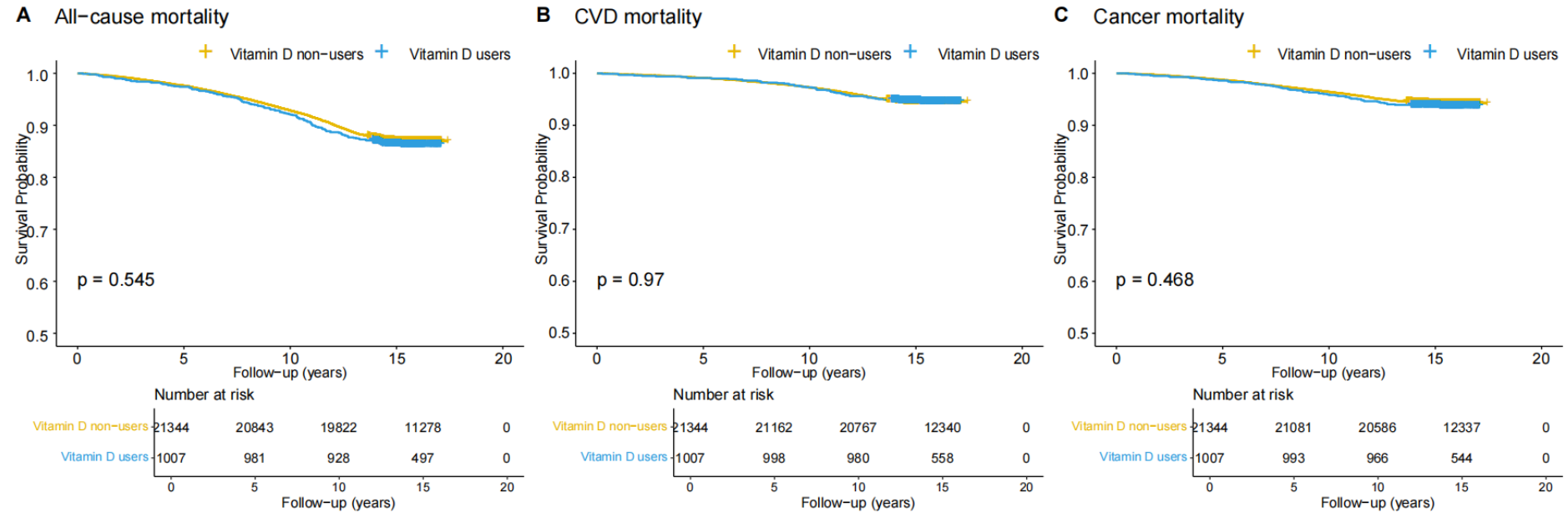
Supplementary Figure 2. Kaplan-Meier curves for all-cause mortality (A), CVD mortality (B), and cancer mortality (C) by vitamin D supplementation status in participants with both diabetes and CKD.

Supplementary 13



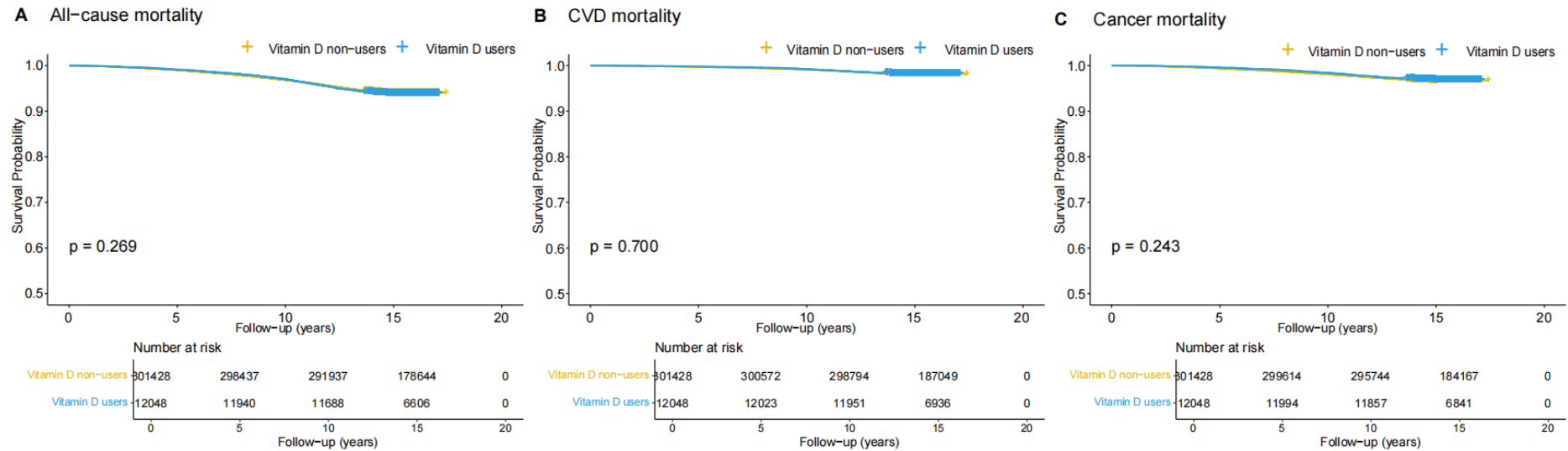
Supplementary Figure 3. Kaplan-Meier curves for all-cause mortality (A), CVD mortality (B), and cancer mortality (C) by vitamin D supplementation status in participants with diabetes alone.

Supplementary 14



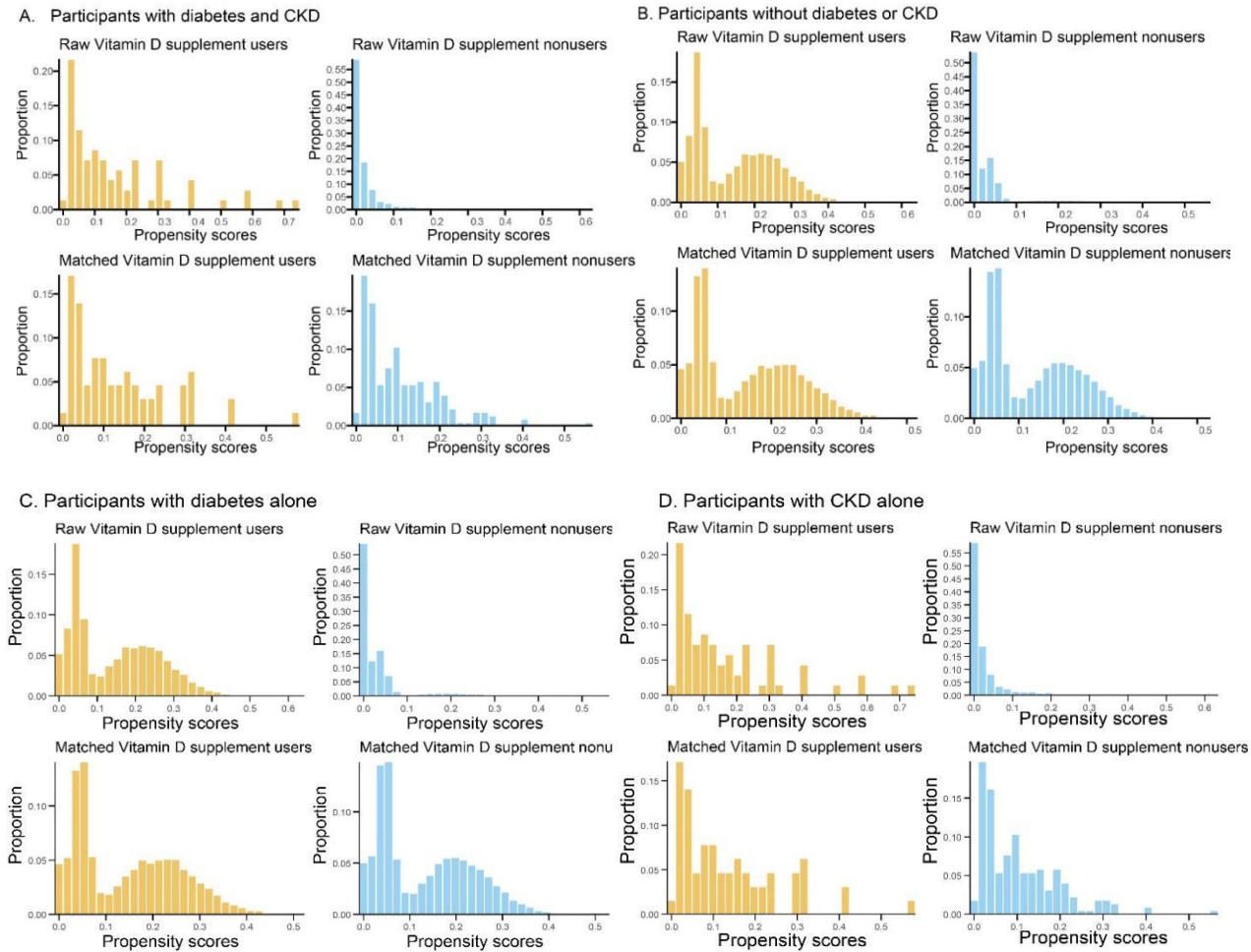
Supplementary Figure 4. Kaplan-Meier curves for all-cause mortality (A), CVD mortality (B), and cancer mortality (C) by vitamin D supplementation status in participants with CKD alone.

Supplementary 15



Supplementary Figure 5. Kaplan-Meier curves for all-cause mortality (A), CVD mortality (B), and cancer mortality (C) by vitamin D supplementation status in participants without diabetes or CKD.

Supplementary 16



Supplementary Figure 6. Histograms of propensity scores before and after matching in participants with diabetes and CKD (A), participants without diabetes or CKD (B), participants with diabetes alone (C) and participants with CKD alone (D)