Table S1. Codes and names of sleep disorders defined according to ICD10.

Diagnostic code (ICD–10)	Category
G47.0	Disorders of initiating and maintaining sleep [insomnias]
G47.1	Disorders of excessive somnolence [hypersomnias]
G47.2	Disorders of the sleep–wake schedule
G47.3	Sleep apnoea
G47.4	Narcolepsy and cataplexy
G47.8	Other sleep disorders
G47.9	Sleep disorder, unspecified

Table S2. Association between dietary vitamin C intake and sleep apnea.

Model	Vitamin C intake(mg/d)	HR	Lower	Upper	*p*–Value
Model1	Q1(<51.27)			Reference	
	Q2(51.27–90.44)	0.733	0.610	0.881	0.001
	Q3(90.44–132.88)	0.819	0.685	0.979	0.028
	Q4(132.88–191.51)	0.608	0.500	0.738	<0.001
	Q5(>191.51)	0.761	0.633	0.914	0.004
Model2	Q1(<51.27)			Reference	
	Q2(51.27–90.44)	0.751	0.624	0.903	0.002
	Q3(90.44–132.88)	0.835	0.698	0.999	0.048
	Q4(132.88–191.51)	0.628	0.516	0.763	<0.001
	Q5(>191.51)	0.794	0.661	0.955	0.014
Model3	Q1(<51.27)			Reference	
	Q2(51.27–90.44)	0.830	0.689	1.000	0.050
	Q3(90.44–132.88)	0.953	0.795	1.143	0.603
	Q4(132.88–191.51)	0.752	0.616	0.918	0.005
	Q5(>191.51)	0.927	0.765	1.123	0.439

Model 1 serves as the crude model.
Model 2 adjusts for age and gender.
Model 3 incorporates additional variables, including education level, household income, Townsend Deprivation Index (TDI), ethnicity, BMI, physical activity, smoking status, alcohol drinker status, total energy intake, vitamin C supplements, hypertension, diabetes, stroke, and malignant neoplasms.

Table S3. Association between dietary vitamin C intake and sleep apnea after gender stratification.

Gender	Vitamin C intake(mg/d)	HR	Lower	Upper	*p*−Value
Male	Q1(<51.27)			Reference	
	Q2(51.27–90.44)	0.863	0.689	1.080	0.198
	Q3(90.44–132.88)	0.987	0.792	1.229	0.906
	Q4(132.88–191.51)	0.765	0.600	0.974	0.030
	Q5(>191.51)	0.886	0.699	1.124	0.320
Female	Q1(<51.27)			Reference	
	Q2(51.27–90.44)	0.775	0.556	1.081	0.133
	Q3(90.44–132.88)	0.889	0.643	1.229	0.477
	Q4(132.88–191.51)	0.728	0.511	1.035	0.077
	Q5(>191.51)	1.008	0.726	1.399	0.961

Covariates adjusted according to model 3.

Table S4. Association between dietary vitamin C intake and sleep apnea after age stratification.

Age	Variable	HR	Lower	Upper	*p*−Value
≤60	Q1(<51.27)			Reference	
	Q2(51.27–90.44)	0.764	0.604	0.967	0.025
	Q3(90.44–132.88)	0.896	0.711	1.128	0.348
	Q4(132.88–191.51)	0.671	0.516	0.872	0.003
	Q5(>191.51)	0.855	0.669	1.094	0.212
>60	Q1(<51.27)			Reference	
	Q2(51.27–90.44)	0.972	0.713	1.327	0.859
	Q3(90.44–132.88)	1.081	0.800	1.462	0.612
	Q4(132.88–191.51)	0.895	0.650	1.232	0.496
	Q5(>191.51)	1.057	0.771	1.449	0.729

Covariates adjusted according to model 3.

Table S5. Association between dietary vitamin C and sleep apnoea in participants with and without hypertension.

Outcome	Vitamin C intake (mg/d)	HR	Lower	Upper	*p*-Value
Hypertension	Q1(<51.27)		Reference		
	Q2(51.27–90.44)	0.867	0.691	1.086	0.214
	Q3(90.44–132.88)	0.980	0.785	1.223	0.856
	Q4(132.88–191.51)	0.751	0.587	0.961	0.023
	Q5(>191.51)	0.925	0.732	1.170	0.517
Non–hypertension	Q1(<51.27)		Reference		
	Q2(51.27–90.44)	0.765	0.550	1.064	0.111
	Q3(90.44–132.88)	0.910	0.663	1.249	0.561
	Q4(132.88–191.51)	0.770	0.548	1.082	0.132
	Q5(>191.51)	0.941	0.673	1.315	0.721

Covariates adjusted according to model 3.

Table S6. Association between dietary vitamin C intake and insomnia.

Model	Vitamin C intake (mg/d)	HR	Lower	Upper	*p*-Value
Model1	Q1(<51.27)			Reference	
	Q2(51.27–90.44)	0.941	0.531	1.668	0.836
	Q3(90.44–132.88)	0.733	0.398	1.351	0.320
	Q4(132.88–191.51)	0.943	0.532	1.670	0.840
	Q5(>191.51)	1.008	0.572	1.775	0.978
Model2	Q1(<51.27)	1.000			
	Q2(51.27–90.44)	0.888	0.501	1.574	0.684
	Q3(90.44–132.88)	0.676	0.366	1.248	0.210
	Q4(132.88–191.51)	0.860	0.485	1.528	0.608
	Q5(>191.51)	0.913	0.517	1.613	0.755
Model3	Q1(<51.27)			Reference	
	Q2(51.27–90.44)	0.896	0.503	1.595	0.709
	Q3(90.44–132.88)	0.682	0.367	1.266	0.225
	Q4(132.88–191.51)	0.876	0.487	1.575	0.658
	Q5(>191.51)	0.883	0.490	1.593	0.679

Model 1 serves as the crude model.

Model 2 adjusts for age and gender.

Model 3 incorporates additional variables, including education level, household income, Townsend Deprivation Index (TDI), ethnicity, BMI, physical activity, smoking status, alcohol drinker status, total energy intake, vitamin C supplements, hypertension, diabetes, stroke, and malignant neoplasms.

Table S7. Association between dietary vitamin C intake and insomnia after gender stratification.

Gender	Vitamin C intake (mg/d)	HR	Lower	Upper	*p-V*value
Male	Q1(<51.27)			Reference	
	Q2(51.27–90.44)	0.688	0.295	1.602	0.386
	Q3(90.44–132.88)	0.448	0.170	1.182	0.105
	Q4(132.88–191.51)	0.548	0.216	1.391	0.206
	Q5(>191.51)	0.391	0.136	1.123	0.081
Female	Q1(<51.27)			Reference	
	Q2(51.27–90.44)	1.209	0.534	2.736	0.649
	Q3(90.44–132.88)	1.008	0.432	2.356	0.985
	Q4(132.88–191.51)	1.319	0.587	2.962	0.503
	Q5(>191.51)	1.474	0.665	3.270	0.339

Covariates adjusted according to model 3.

Table S8. Association between dietary vitamin C intake and insomnia after age stratification.

Age	Vitamin C intake (mg/d)	HR	Lower	Upper	*p-V*alue
≤60	Q1(<51.27)			Reference	
	Q2(51.27–90.44)	1.044	0.480	2.269	0.914
	Q3(90.44–132.88)	0.857	0.372	1.976	0.717
	Q4(132.88–191.51)	0.896	0.385	2.085	0.799
	Q5(>191.51)	1.130	0.507	2.519	0.765
> 60	Q1(<51.27)			Reference	
	Q2(51.27–90.44)	0.725	0.306	1.719	0.466
	Q3(90.44–132.88)	0.513	0.204	1.290	0.156
	Q4(132.88–191.51)	0.789	0.346	1.802	0.574
	Q5(>191.51)	0.636	0.266	1.522	0.310

Covariates adjusted according to model 3.

Table S9. Association between dietary vitamin C and insomnia in participants with and without hypertension.

Outcome	Vitamin C intake (mg/d)	HR	Lower	Upper	p-Value
Hypertension	Q1(<51.27)		Reference		
	Q2(51.27–90.44)	0.764	0.369	1.584	0.469
	Q3(90.44–132.88)	0.458	0.195	1.073	0.072
	Q4(132.88–191.51)	0.840	0.405	1.742	0.639
	Q5(>191.51)	0.672	0.311	1.452	0.313
Non–hypertension	Q1(<51.27)		Reference		
	Q2(51.27–90.44)	1.232	0.466	3.258	0.673
	Q3(90.44–132.88)	1.196	0.450	3.180	0.719
	Q4(132.88–191.51)	1.007	0.368	2.761	0.989
	Q5(>191.51)	1.333	0.506	3.509	0.561

Covariates adjusted according to model 3.

Table S10. Association between dietary vitamin C intake and other types of sleep disorders.

Model	Vitamin C intake (mg/d)	HR	Lower	Upper	*p-V*value
Model1	Q1(<51.27)			Reference	
	Q2(51.27–90.44)	0.765	0.432	1.353	0.357
	Q3(90.44–132.88)	0.545	0.290	1.024	0.059
	Q4(132.88–191.51)	0.840	0.481	1.464	0.538
	Q5(>191.51)	0.973	0.568	1.667	0.921
Model2	Q1(<51.27)			Reference	
	Q2(51.27–90.44)	0.790	0.446	1.398	0.418
	Q3(90.44–132.88)	0.565	0.300	1.064	0.077
	Q4(132.88–191.51)	0.880	0.503	1.538	0.654
	Q5(>191.51)	1.027	0.598	1.764	0.923
Model3	Q1(<51.27)			Reference	
	Q2(51.27–90.44)	0.863	0.485	1.534	0.615
	Q3(90.44–132.88)	0.630	0.332	1.193	0.156
	Q4(132.88–191.51)	1.027	0.580	1.820	0.926
	Q5(>191.51)	1.177	0.670	2.067	0.572

Model 1 serves as the crude model.

Model 2 adjusts for age and gender.

Model 3 incorporates additional variables, including education level, household income, Townsend Deprivation Index (TDI), ethnicity, BMI, physical activity, smoking status, alcohol drinker status, total energy intake, vitamin C supplements, hypertension, diabetes, stroke, and malignant neoplasms.

Table S11. Association between dietary vitamin C intake and other types of sleep disorders after gender stratification.

Gender	Vitamin C intake (mg/d)	HR	Lower	Upper	*p-V*alue
Male	Q1(<51.27)			Reference	
	Q2(51.27–90.44)	0.965	0.468	1.991	0.924
	Q3(90.44–132.88)	0.553	0.235	1.305	0.176
	Q4(132.88–191.51)	0.960	0.454	2.032	0.916
	Q5(>191.51)	1.048	0.497	2.214	0.901
Female	Q1(<51.27)			Reference	
	Q2(51.27–90.44)	0.720	0.277	1.871	0.500
	Q3(90.44–132.88)	0.759	0.290	1.987	0.575
	Q4(132.88–191.51)	1.178	0.487	2.848	0.717
	Q5(>191.51)	1.421	0.602	3.353	0.423

Covariates adjusted according to model 3.

Table S12. Association between dietary vitamin C intake and other types of sleep disorders after age stratification.

Age	Vitamin C intake (mg/d)	HR	Lower	Upper	*p-V*alue
≤60	Q1(<51.27)			Reference	
	Q2(51.27–90.44)	0.603	0.290	1.251	0.174
	Q3(90.44–132.88)	0.588	0.276	1.254	0.169
	Q4(132.88–191.51)	0.960	0.489	1.887	0.906
	Q5(>191.51)	0.978	0.492	1.944	0.950
> 60	Q1(<51.27)			Reference	
	Q2(51.27–90.44)	1.882	0.640	5.534	0.251
	Q3(90.44–132.88)	0.888	0.255	3.099	0.853
	Q4(132.88–191.51)	1.472	0.472	4.594	0.506
	Q5(>191.51)	1.986	0.667	5.914	0.218

Covariates adjusted according to model 3.

Table S13. Association between dietary vitamin C and other types of sleep disorders in participants with and without hypertension.

Outcome	Vitamin C intake (mg/d)	HR	Lower	Upper	*p-V*alue
Hypertension	Q1(<51.27)		Reference		
	Q2(51.27–90.44)	1.259	0.603	2.631	0.540
	Q3(90.44–132.88)	0.434	0.155	1.218	0.113
	Q4(132.88–191.51)	0.939	0.408	2.161	0.883
	Q5(>191.51)	1.247	0.573	2.715	0.578
Non–hypertension	Q1(<51.27)		Reference		
	Q2(51.27–90.44)	0.480	0.181	1.270	0.139
	Q3(90.44–132.88)	0.816	0.353	1.882	0.633
	Q4(132.88–191.51)	1.096	0.497	2.417	0.820
	Q5(>191.51)	1.099	0.484	2.496	0.822

Covariates adjusted according to model 3.

Figure S1. The results of dose–response between dietary vitamin C intake and sleep disorders in males.

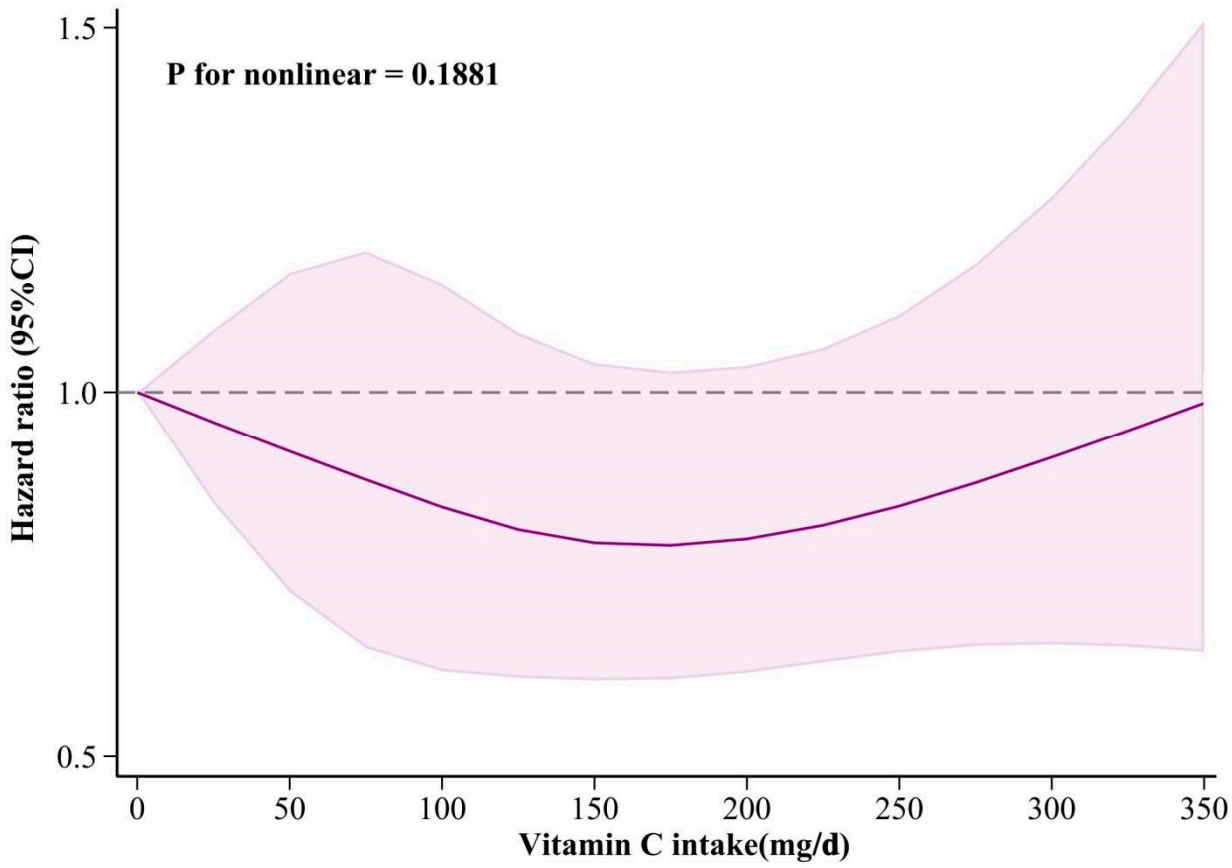


Figure S2. The results of dose–response between dietary vitamin C intake and sleep disorders in individuals aged ≤60.

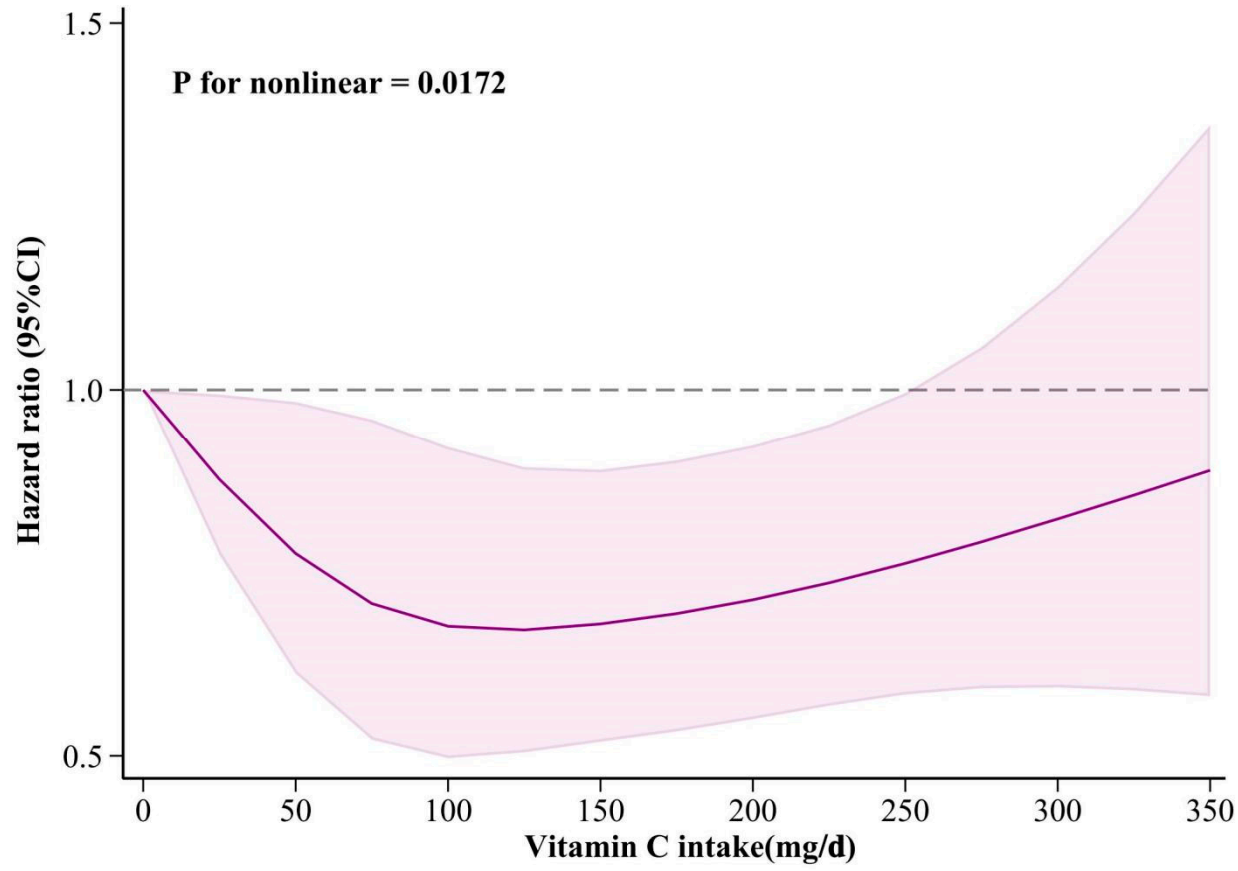


Figure S3. The results of dose–response between dietary vitamin C intake and sleep disorders in individuals with hypertension.

