

## Supplemental materials

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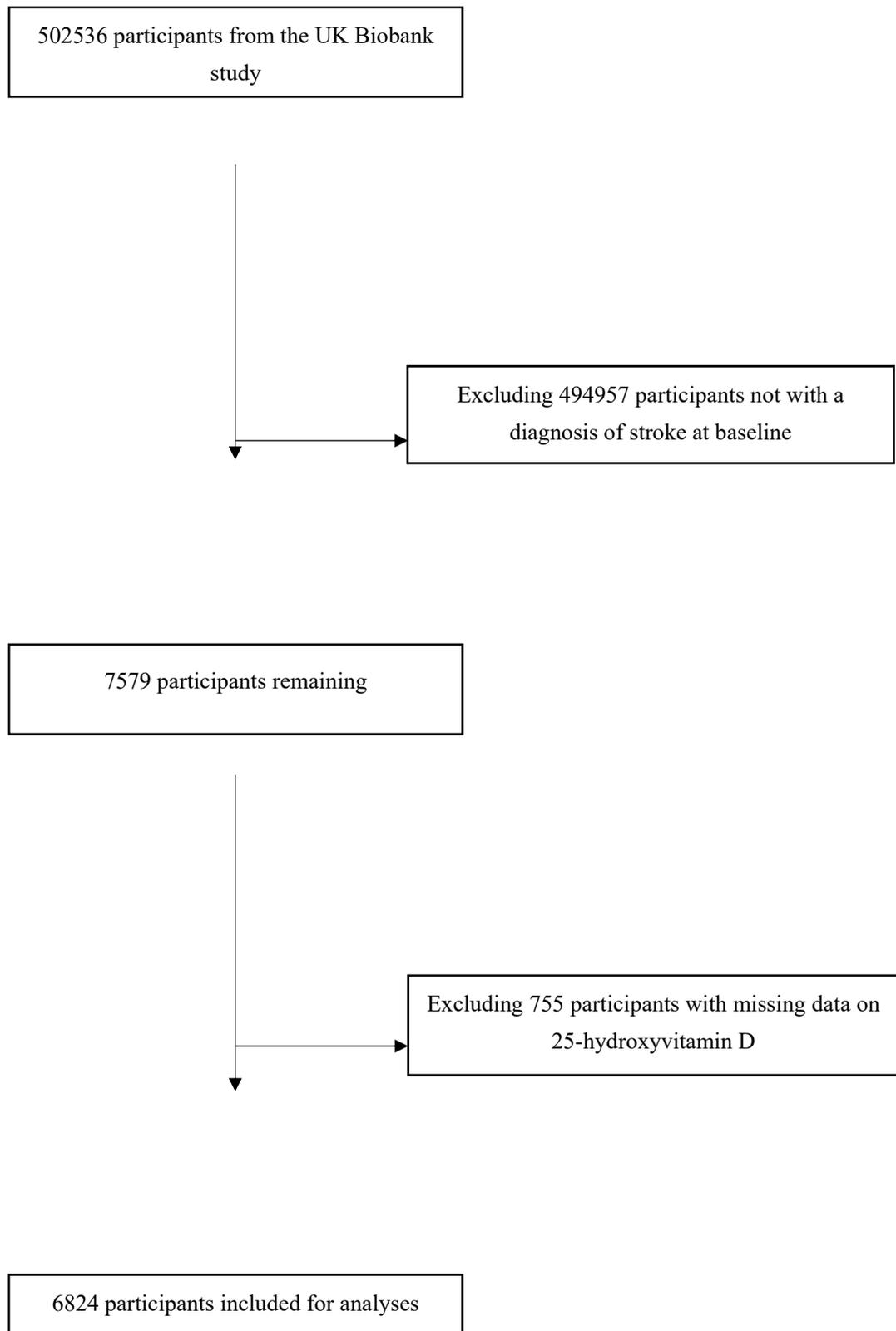
**Supplemental Figure S9. Restricted cubic splines showing 25(OH)D in relation to recurrent stroke in patients no less than 65 years with the lowest risk laying at 53.3 nmol/L..... 15**

**Supplemental Table S1.** Codes used for ascertainment of stroke events at baseline and during follow-up

<b>Diseases</b>	<b>Source</b>	<b>Code</b>
<b>Stroke</b>	HES (ICD 10)	I60, I61, I62, I63, I64
	HES (ICD 9)	430, 431, 432, 433, 434, 436
	Baseline (non-cancer illness code)	1081, 1086, 1491, 1583
<b>Ischemic stroke</b>	HES (ICD 10)	I63
	HES (ICD 9)	433, 434
<b>Hemorrhagic stroke</b>	HES (ICD 10)	I60, I61, I62
	HES (ICD 9)	430, 431, 432

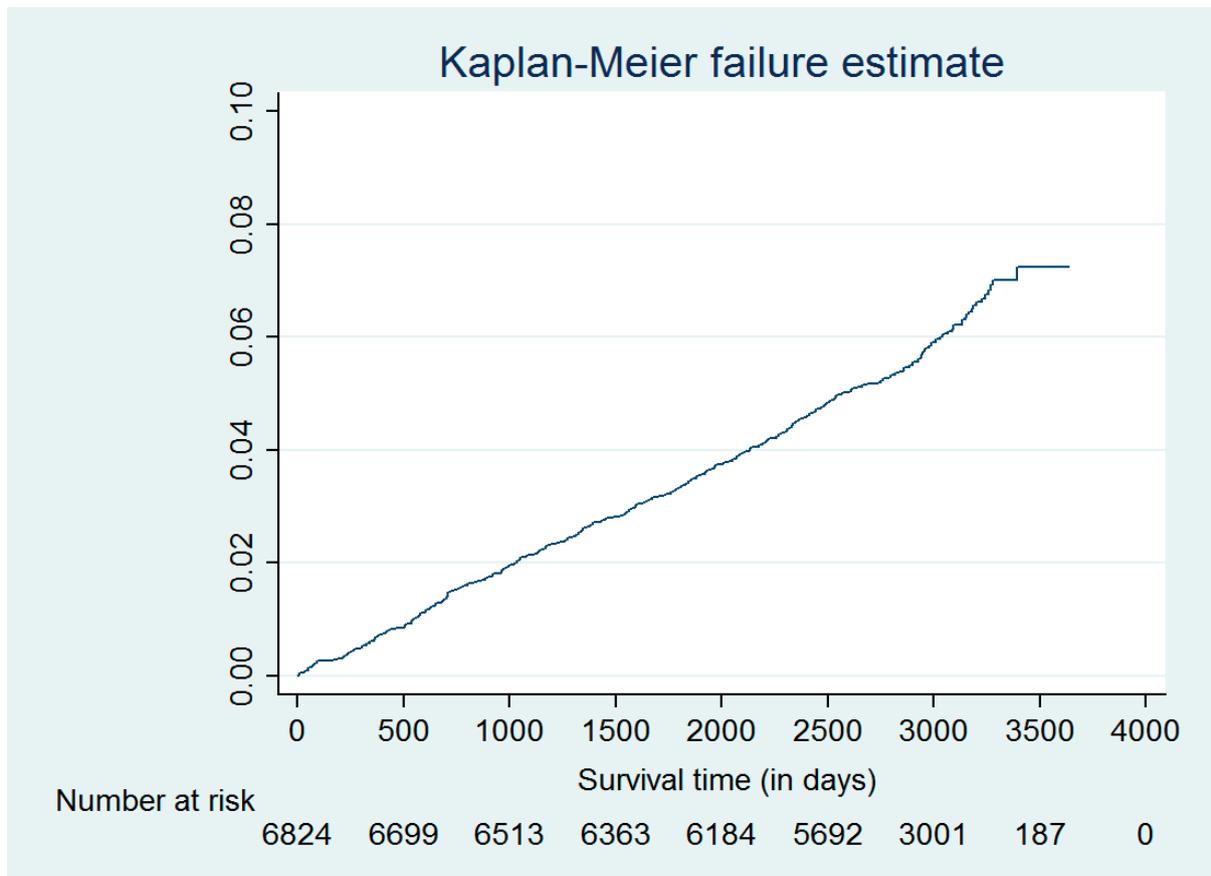
HES = Hospital Episode Statistics; ICD = International Classification of Diseases

**Supplemental Figure S1.** Flow diagram showing the selection of participants in this study

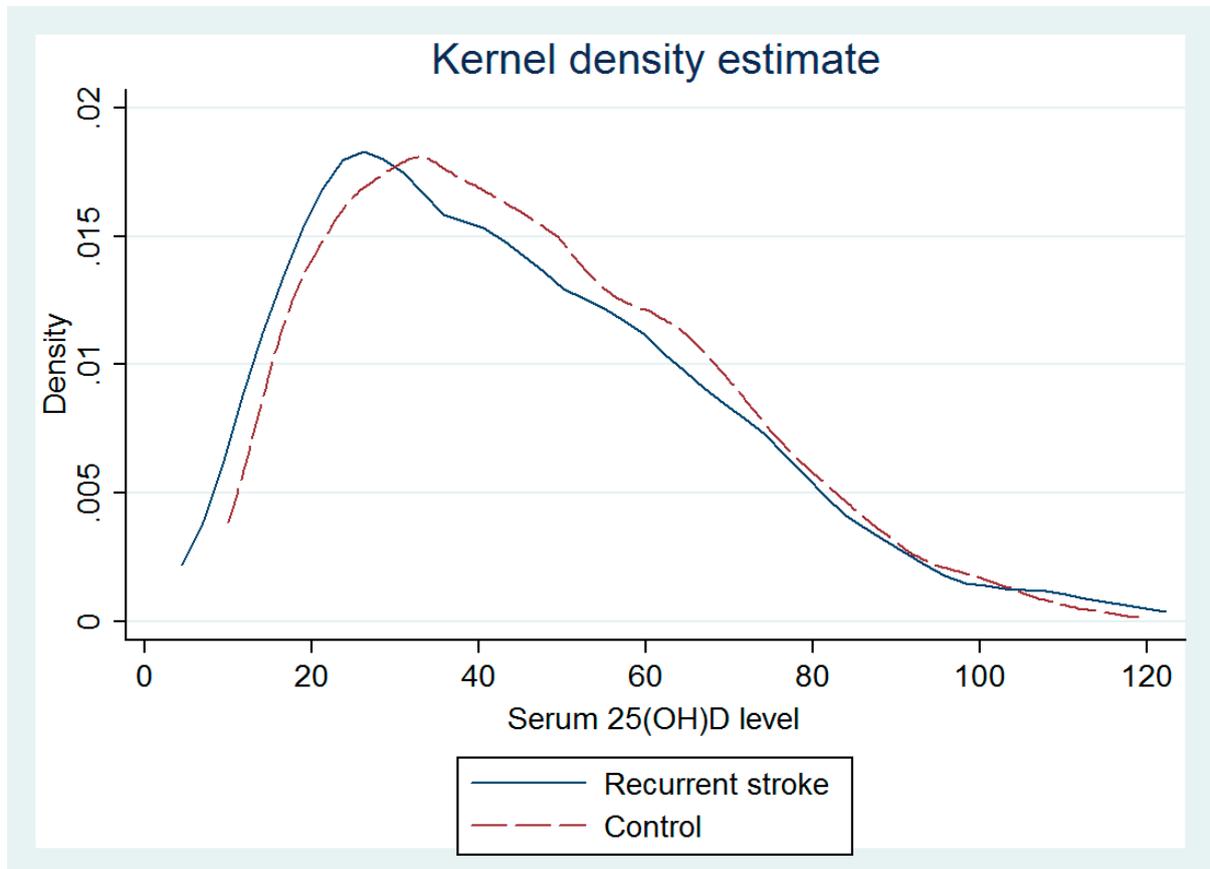




**Supplemental Figure S2.** Kaplan-Meier failure curve for incident recurrent stroke



**Supplemental Figure S3.** Kernel density estimate for probability density function of 25(OH)D stratified by participants with and without recurrent stroke



**Supplemental Table S2.** Sensitivity analysis results for the relationship between 25(OH)D and risk of recurrent ischemic stroke

Sensitivity analysis	25(OH)D level, in nmol/L <sup>1</sup>							
	10	20	30	40	50	60	70	80
<b>Competing risk analysis<sup>1</sup></b>	Ref	1.40 (0.88 - 2.24)	0.69 (0.44 - 1.09)	0.76 (0.48 - 1.19)	0.70 (0.44 - 1.13)	0.66 (0.40 - 1.12)	0.82 (0.49 - 1.37)	0.70 (0.42 - 1.17)
<b>Model with further adjustment</b>								
Further adjusted for the month for 25(OH)D measures <sup>2</sup>	Ref	0.84 (0.64 - 1.11)	0.71 (0.44 - 1.16)	0.60 (0.35 - 1.04)	0.53 (0.32 - 0.87)	0.51 (0.31 - 0.82)	0.54 (0.34 - 0.86)	0.61 (0.38 - 0.99)
Further adjusted for the length between the stroke onset and blood sampling date <sup>3</sup>	Ref	0.84 (0.64 - 1.11)	0.71 (0.44 - 1.16)	0.60 (0.35 - 1.03)	0.53 (0.32 - 0.87)	0.51 (0.32 - 0.82)	0.55 (0.34 - 0.86)	0.62 (0.39 - 1.00)
Further adjusted for both the month and the length <sup>4</sup>	Ref	0.84 (0.64 - 1.10)	0.70 (0.43 - 1.14)	0.59 (0.34 - 1.02)	0.51 (0.31 - 0.85)	0.50 (0.31 - 0.80)	0.53 (0.33 - 0.85)	0.60 (0.37 - 0.97)

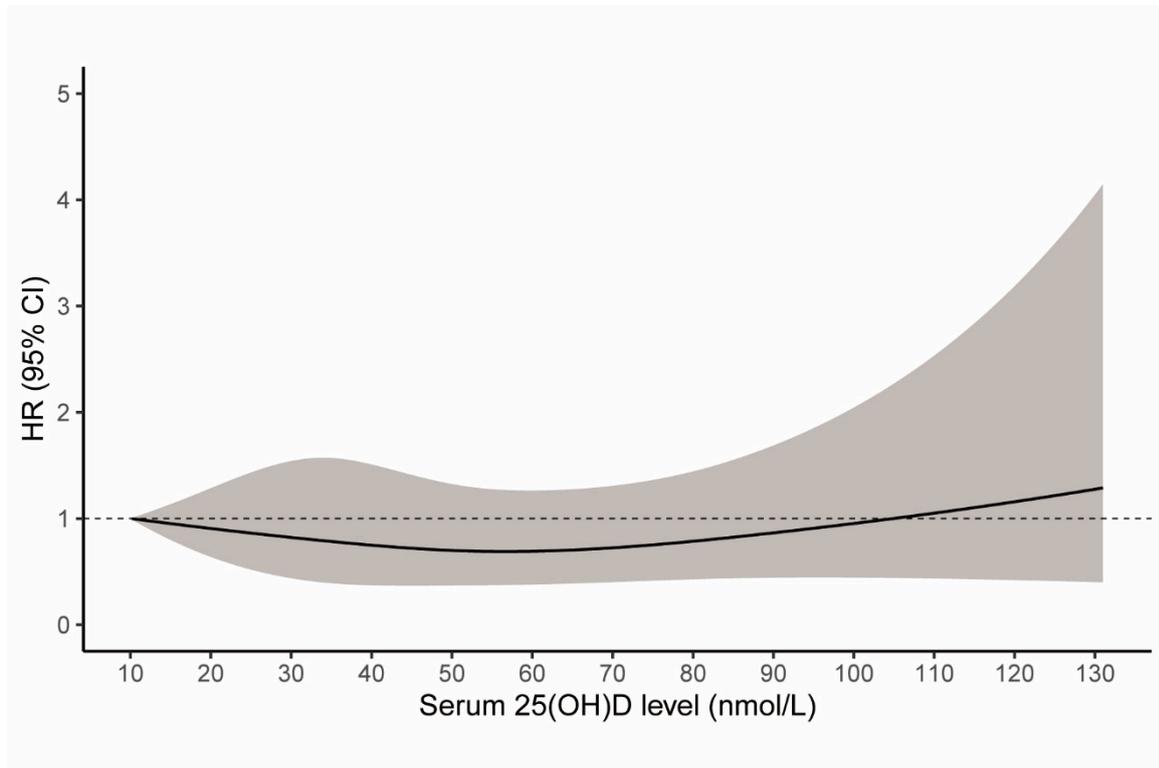
<sup>1</sup> Results shown as subhazard ratios (95% confidence intervals) from the Fine and Gray models adjusted for age, sex, BMI, smoking and drinking, physical activity, comorbidities, medications and supplementation.

<sup>2</sup> Results shown as hazard ratios (95% confidence intervals) from the Cox models that used restricted cubic splines and were adjusted for age, sex, BMI, smoking and drinking, physical activity, comorbidities, medications and supplementation, and the month for 25(OH)D measures.

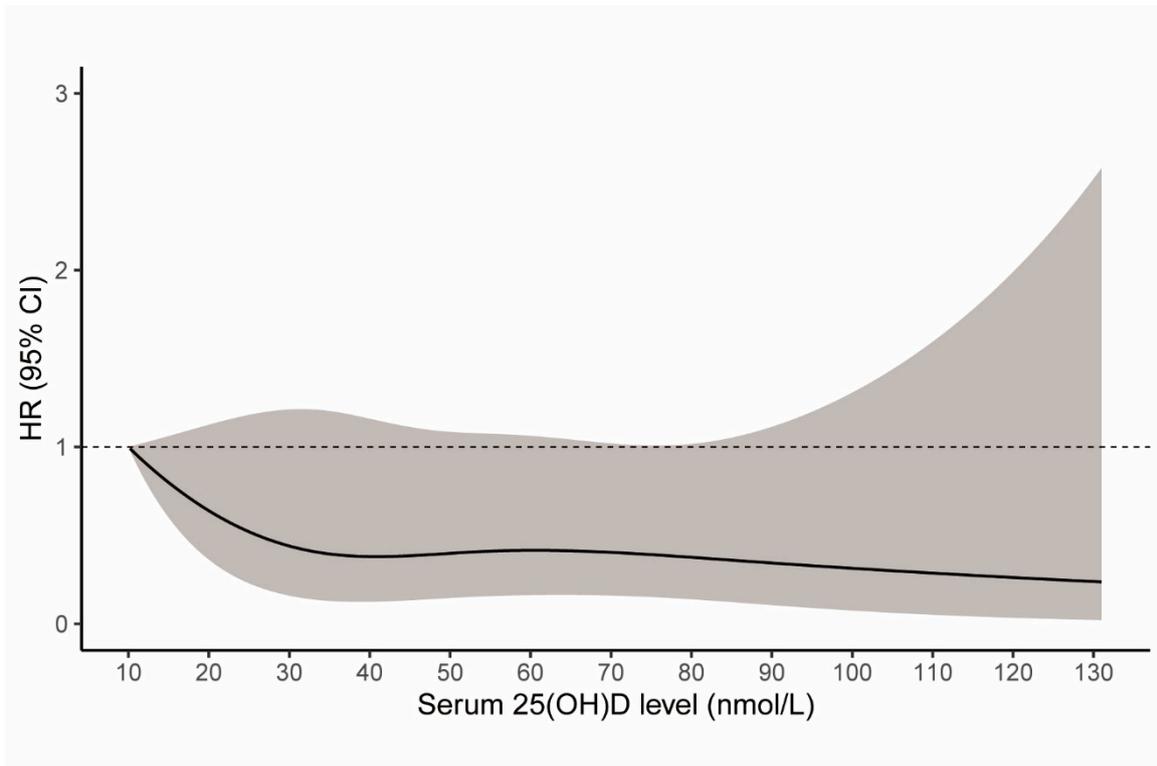
<sup>3</sup> Results shown as hazard ratios (95% confidence intervals) from the Cox models that used restricted cubic splines and were adjusted for age, sex, BMI, smoking and drinking, physical activity, comorbidities, medications and supplementation, and the length between stroke onset and blood sampling date.

<sup>4</sup> Results shown as hazard ratios (95% confidence intervals) from the Cox models that used restricted cubic splines and were adjusted for age, sex, BMI, smoking and drinking, physical activity, comorbidities, medications and supplementation, the month for 25(OH)D measures and the length between stroke onset and blood sampling date.

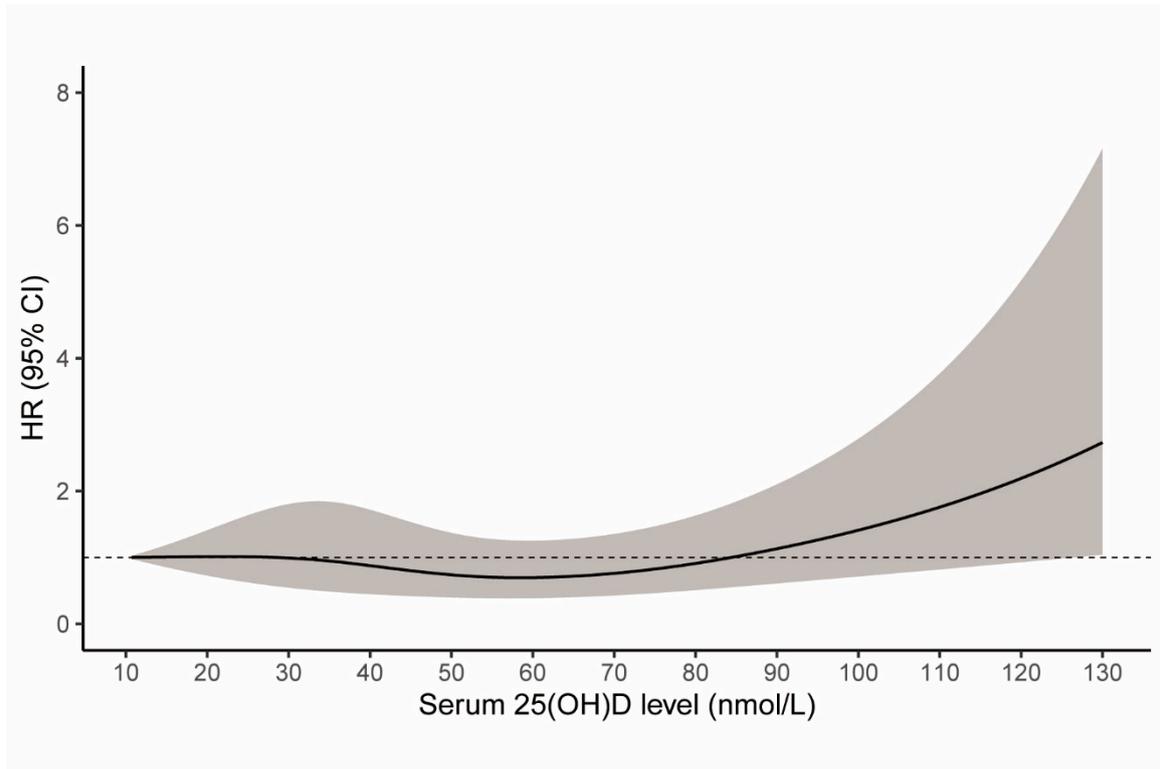
**Supplemental Figure S4.** Restricted cubic splines showing 25(OH)D in relation to recurrent ischemic stroke with the lowest risk laying at 56.3 nmol/L



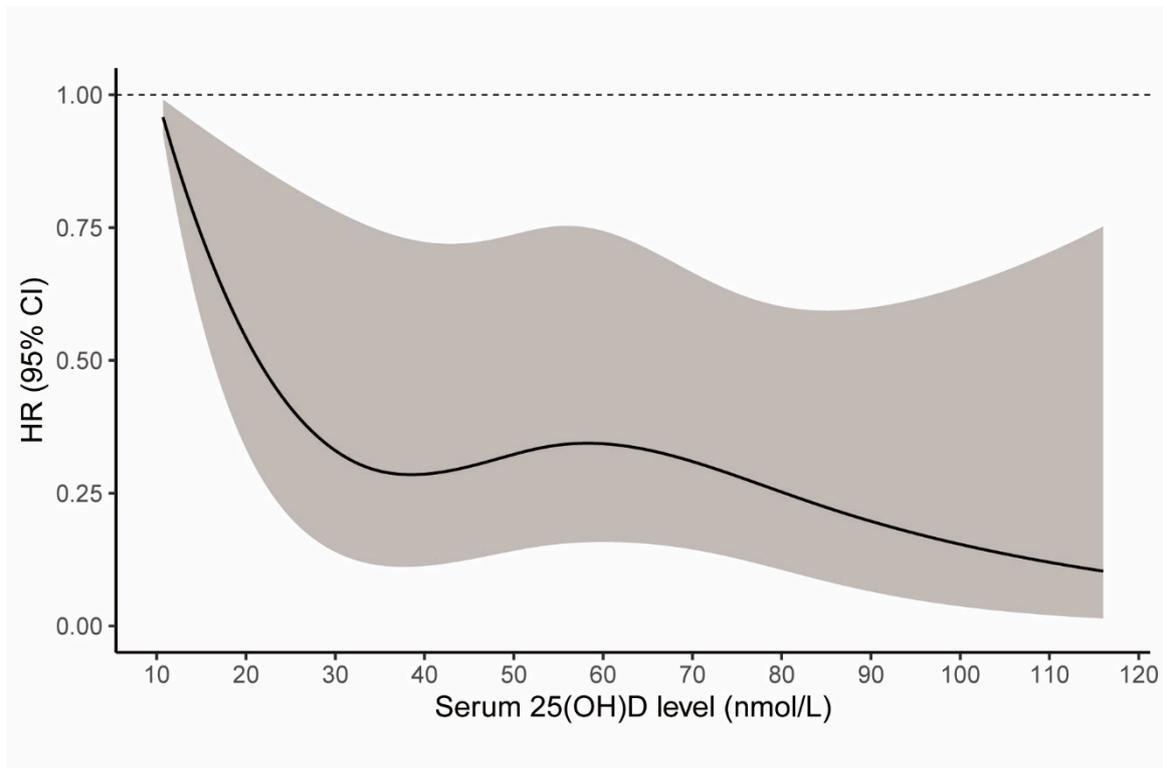
**Supplemental Figure S5.** Restricted cubic splines showing 25(OH)D in relation to recurrent hemorrhagic stroke with the potentially lowest risk laying at 41.2 nmol/L



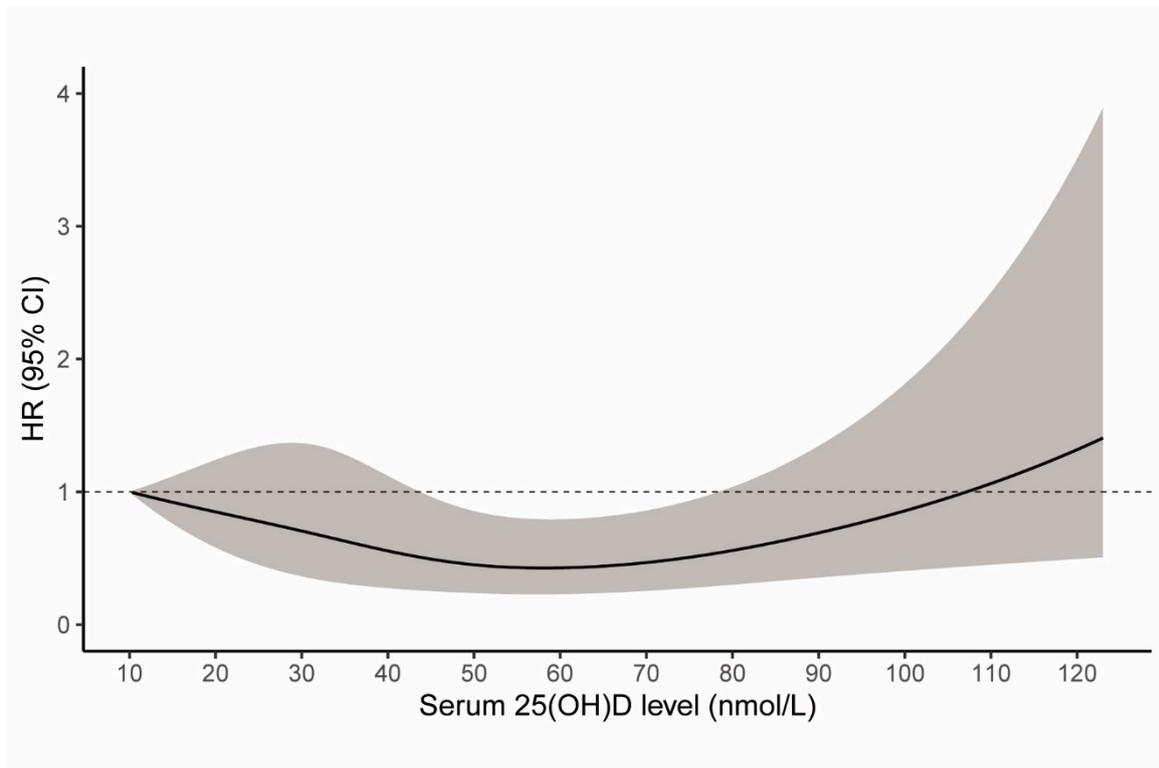
**Supplemental Figure S6.** Restricted cubic splines showing 25(OH)D in relation to recurrent stroke in males with the lowest risk laying at 58.7 nmol/L



**Supplemental Figure S7.** Restricted cubic splines showing 25(OH)D in relation to recurrent stroke in females with the potentially lowest risk laying at 38.7 nmol/L



**Supplemental Figure S8.** Restricted cubic splines showing 25(OH)D in relation to recurrent stroke in patients less than 65 years with the lowest risk laying at 58.4 nmol/L



**Supplemental Figure S9.** Restricted cubic splines showing 25(OH)D in relation to recurrent stroke in patients no less than 65 years with the lowest risk laying at 53.3 nmol/L

