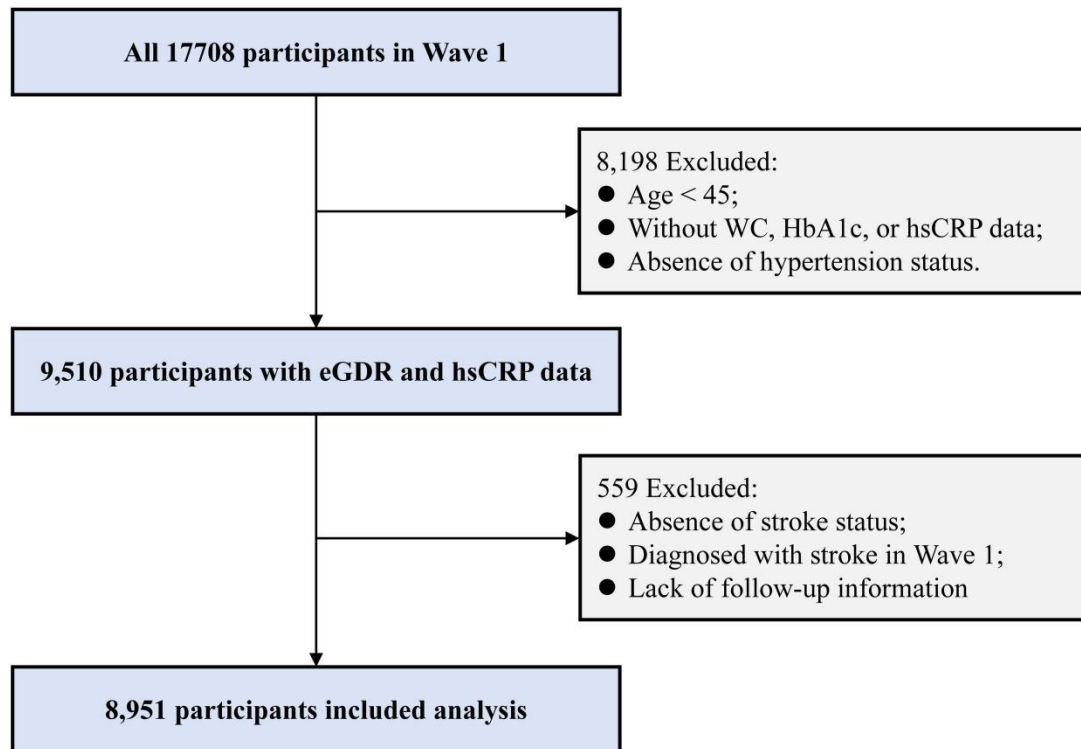
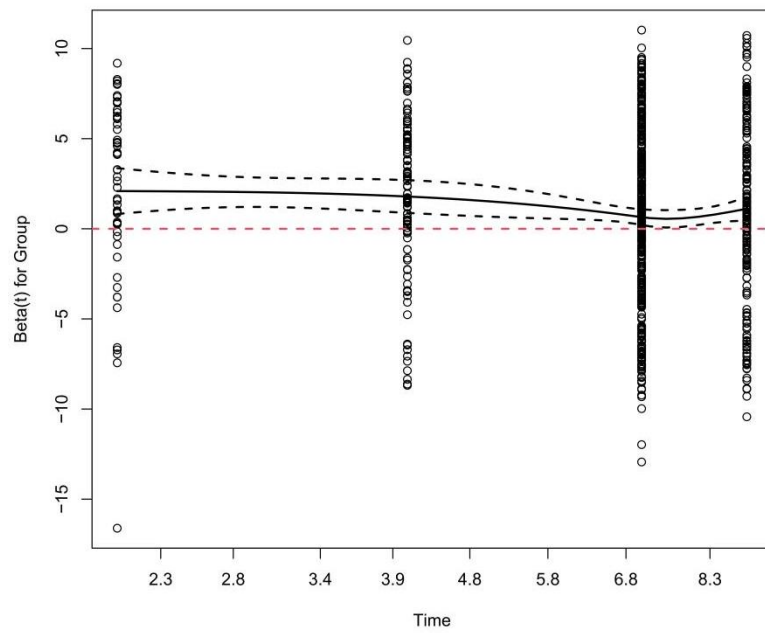


Supplementary Materials

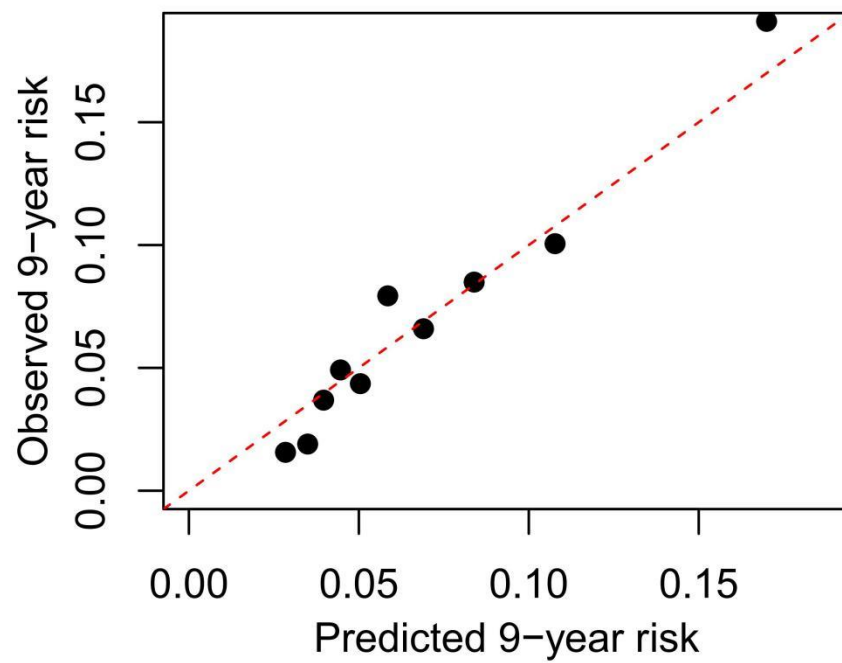
Impact of estimated glucose disposal rate and high-sensitivity C-reactive protein on the risk of new-onset stroke: a nationwide prospective cohort study



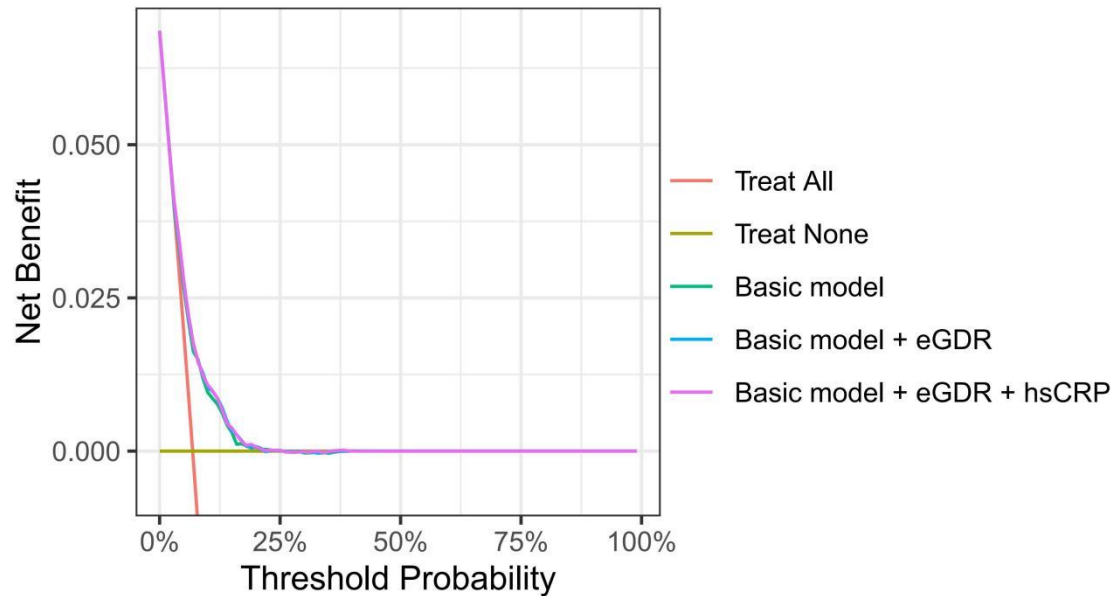
Supplementary Figure 1. Flowchart of participant selection. Biologically implausible height ($n = 8$) or weight ($n = 1$) values set to missing and handled by multiple imputation (no participants excluded)



Supplementary Figure 2. Scaled Schoenfeld residuals for the proportional hazards assumption test



Supplementary Figure 3. Calibration plot of the combined model



Supplementary Figure 4. Decision-curve analysis of the prediction models. The y-axis represents the net benefit, and the x-axis represents the threshold probability. The combined model (basic model + eGDR + hsCRP) provided a net benefit over the treat-all and treat-none strategies at threshold probabilities of approximately 2%–25%, although the incremental net benefit over the basic model and the eGDR-only model was modest. The basic model included age, sex, education level, marital status, work status, disability, smoking, alcohol consumption, BMI, hyperlipidemia, DM, HD, lipid-lowering medication, glucose-lowering medication, and antihypertensive medication. eGDR, estimated glucose disposal rate; hsCRP, high-sensitivity C-reactive protein; BMI, body mass index; DM, diabetes mellitus; HD, heart disease.

Supplementary Table 1. Summary of missing data

Variables	Deficiencies	
	N	%
Age	0	0.0
Sex	0	0.0
Marital Status	0	0.0
Residence	0	0.0
Smoke	1	0.0
Education	2	0.0
Disability	6	0.1
Drink	6	0.1
Health insurance	25	0.3
HD	34	0.4
Weight	43	0.5
Height	57	0.6
Antihypertensive medication	51	0.6
DM	88	1.0

Antidiabetic drugs	89	1.0
Work	121	1.4
Sleep duration	123	1.4
Hyperlipidemia	179	2.0
Lipid lowering drug	183	2.0
Life satisfaction	870	9.7
Ethnicity	1282	14.3

Supplementary Table 2. Model 3 for assessing stroke risk: variance inflation factor

Variable Name	GVIF	Df	GVIF ^{1/(2*Df)}
Sex	2.27633236738046	1	1.50875192373712
Age	1.53068260716884	1	1.23720758450991
Education	1.19779504865988	1	1.09443823428272
Marital status	1.15322864304173	1	1.07388483695494
Hyperlipidemia	1.68056127906255	1	1.29636463969924
DM	2.4905340986141	1	1.57814261035373
HD	1.12771071535721	1	1.06193724643088
Work	1.2582712814956	1	1.12172691930594
Smoke	1.90966861344722	1	1.38190759946069
Disability	1.05689926776163	1	1.0280560625577
Drink	1.45476527614711	1	1.20613650808982
BMI	1.374006652	1	1.17218029847801
Antidiabetic drugs	2.5000645078969	1	1.58115922914073
Lipid-lowering drug	1.62138972236141	1	1.27333802360623
Antihypertensive medication	1.42510928129879	1	1.1937794106529
eGDR & hsCRP	1.53681932333167	3	1.07424614060277

Supplementary Table 3. Stratified Cox regression analysis accounting for deviations from the proportional hazards assumption

eGDR & hsCRP	HR (95% CI)	P value
eGDR<9.92 & hsCRP≥1.03	Ref	
eGDR<9.92 & hsCRP<1.03	0.75 (0.62, 0.90)	0.002
eGDR≥9.92 & hsCRP≥1.03	0.68 (0.54, 0.86)	0.001
eGDR≥9.92 & hsCRP<1.03	0.49 (0.39, 0.62)	<0.001

Stratified by sex, marital status, work status, and smoking; adjusted for age, education, hyperlipidemia, DM, HD, disability, drinking, BMI, antidiabetic drugs, lipid-lowering drugs, and antihypertensive medication.

Supplementary Table 4. Association of eGDR, hsCRP, and eGDR & hsCRP with stroke risk after excluding cases with missing data

Variable	Event n(%)	Model 1 HR (95%CI)	P value	Model 2 HR (95%CI)	P value	Model 3 HR (95%CI)	P value
eGDR&hsCRP							
eGDR<9.92&hsCRP≥1.03	365 (14.6)	Ref		Ref		Ref	
eGDR<9.92&hsCRP<1.03	178 (9.8)	0.66 (0.55, 0.78)	<0.001	0.68 (0.57, 0.82)	<0.001	0.70 (0.58, 0.84)	<0.001
eGDR≥9.92&hsCRP≥1.03	126 (7.1)	0.46 (0.38, 0.56)	<0.001	0.53 (0.43, 0.66)	<0.001	0.66 (0.52, 0.83)	<0.001
eGDR≥9.92&hsCRP<1.03	123 (4.9)	0.31 (0.26, 0.38)	<0.001	0.38 (0.31, 0.48)	<0.001	0.48 (0.38, 0.61)	<0.001
eGDR							
eGDR<9.92	543 (12.6)	Ref		Ref		Ref	
eGDR≥9.92	249 (5.8)	0.44 (0.38, 0.51)	<0.001	0.53 (0.45, 0.62)	<0.001	0.66 (0.55, 0.79)	<0.001
hsCRP							
hsCRP<1.03	301 (6.9)	Ref		Ref		Ref	
hsCRP≥1.03	491 (11.5)	1.7 (1.47, 1.96)	<0.001	1.5 (1.3, 1.74)	<0.001	1.44 (1.24, 1.67)	<0.001

Model 1: No adjustment for covariates; Model 2: Adjusted for age, sex, education, marital status, work, smoke, drink, disability, BMI; Model 3: Adjusted for age, sex, education, marital status, work, smoke, drink, disability, BMI, hyperlipidemia, DM, HD, lipid-lowering medication, glucose-lowering medication, antihypertensive medication. HR, Hazard Ratio; CI, confidence interval; eGDR, estimated glucose disposal rate; hsCRP, high sensitivity C-reactive protein; BMI, body mass index; DM, diabetes mellitus; HD, heart disease.

Supplementary Table 5. Association of eGDR, hsCRP, and eGDR & hsCRP with stroke risk after excluding patients with cancer

Variable	Event n(%)	Model 1 HR (95%CI)	P value	Model 2 HR (95%CI)	P value	Model 3 HR (95%CI)	P value
eGDR&hsCRP							
eGDR<9.92&hsCRP≥1.03	371 (14.4)	Ref		Ref		Ref	
eGDR<9.92&hsCRP<1.03	184 (9.9)	0.67 (0.56, 0.80)	<0.001	0.73 (0.61, 0.87)	0.001	0.75 (0.63, 0.90)	0.002
eGDR≥9.92&hsCRP≥1.03	130 (7.1)	0.47 (0.38, 0.57)	<0.001	0.55 (0.45, 0.68)	<0.001	0.69 (0.55, 0.87)	0.001
eGDR≥9.92&hsCRP<1.03	125 (4.8)	0.31 (0.26, 0.38)	<0.001	0.39 (0.32, 0.49)	<0.001	0.49 (0.39, 0.62)	<0.001
eGDR							
eGDR<9.92	555 (12.5)	Ref		Ref		Ref	
eGDR≥9.92	255 (5.7)	0.44 (0.38, 0.51)	<0.001	0.53 (0.45, 0.62)	<0.001	0.66 (0.55, 0.79)	<0.001
hsCRP							
hsCRP<1.03	309 (6.9)	Ref		Ref		Ref	
hsCRP≥1.03	501 (11.4)	1.68 (1.46, 1.94)	<0.001	1.45 (1.26, 1.68)	<0.001	1.38 (1.19, 1.60)	<0.001

Model 1: No adjustment for covariates; Model 2: Adjusted for age, sex, education, marital status, work, smoke, drink, disability, BMI; Model 3: Adjusted for age, sex, education, marital status, work, smoke, drink, disability, BMI, hyperlipidemia, DM, HD, lipid-lowering medication, glucose-lowering medication, antihypertensive medication. HR, Hazard Ratio; CI, confidence interval; eGDR, estimated glucose disposal rate; hsCRP, high sensitivity C-reactive protein; BMI, body mass index; DM, diabetes mellitus; HD, heart disease.

Supplementary Table 6. Association of eGDR, hsCRP, and eGDR & hsCRP with

stroke risk after excluding patients with HD

Variable	Event n(%)	Model 1 HR (95%CI)	P value	Model 2 HR (95%CI)	P value	Model 3 HR (95%CI)	P value
eGDR&hsCRP							
eGDR<9.92&hsCRP≥1.03	279 (12.9)	Ref		Ref		Ref	
eGDR<9.92&hsCRP<1.03	150 (9.4)	0.72 (0.59, 0.87)	0.001	0.78 (0.64, 0.96)	0.017	0.81 (0.66, 0.99)	0.039
eGDR≥9.92&hsCRP≥1.03	118 (6.9)	0.52 (0.42, 0.64)	<0.001	0.61 (0.49, 0.77)	<0.001	0.75 (0.59, 0.95)	0.020
eGDR≥9.92&hsCRP<1.03	104 (4.3)	0.32 (0.25, 0.40)	<0.001	0.40 (0.32, 0.51)	<0.001	0.49 (0.38, 0.63)	<0.001
eGDR							
eGDR<9.92	429 (11.4)	Ref		Ref		Ref	
eGDR≥9.92	222 (5.4)	0.45 (0.39, 0.53)	<0.001	0.55 (0.46, 0.66)	<0.001	0.67 (0.55, 0.81)	<0.001
hsCRP							
hsCRP<1.03	254 (6.3)	Ref		Ref		Ref	
hsCRP≥1.03	397 (10.2)	1.66 (1.42, 1.94)	<0.001	1.43 (1.22, 1.68)	<0.001	1.37 (1.16, 1.61)	<0.001

Model 1: No adjustment for covariates; Model 2: Adjusted for age, sex, education, marital status, work, smoke, drink, disability, BMI; Model 3: Adjusted for age, sex, education, marital status, work, smoke, drink, disability, BMI, hyperlipidemia, DM, lipid-lowering medication, glucose-lowering medication, antihypertensive medication. HR, Hazard Ratio; CI, confidence interval; eGDR, estimated glucose disposal rate; hsCRP, high sensitivity C-reactive protein; BMI, body mass index; DM, diabetes mellitus.

Supplementary Table 7. Association of eGDR, hsCRP, and eGDR & hsCRP with stroke risk after comprehensive adjustment for hematologic indicators

Variable	Event n(%)	Model 1 HR (95%CI)	P value	Model 2 HR (95%CI)	P value	Model 3 HR (95%CI)	P value
eGDR&hsCRP							
eGDR<9.92&hsCRP≥1.03	375 (14.4)	Ref		Ref		Ref	
eGDR<9.92&hsCRP<1.03	185 (9.9)	0.67 (0.56, 0.80)	<0.001	0.72 (0.61, 0.87)	<0.001	0.77 (0.64, 0.93)	0.006
eGDR≥9.92&hsCRP≥1.03	130 (7.0)	0.46 (0.38, 0.56)	<0.001	0.55 (0.44, 0.67)	<0.001	0.71 (0.57, 0.90)	0.004
eGDR≥9.92&hsCRP<1.03	125 (4.8)	0.31 (0.25, 0.38)	<0.001	0.39 (0.31, 0.49)	<0.001	0.51 (0.40, 0.65)	<0.001
eGDR							
eGDR<9.92	560 (12.5)	Ref		Ref		Ref	
eGDR≥9.92	255 (5.7)	0.43 (0.37, 0.50)	<0.001	0.53 (0.45, 0.62)	<0.001	0.68 (0.57, 0.82)	<0.001
hsCRP							
hsCRP<1.03	310 (6.9)	Ref		Ref		Ref	
hsCRP≥1.03	505 (11.3)	1.68 (1.46, 1.94)	<0.001	1.45 (1.26, 1.68)	<0.001	1.35 (1.16, 1.57)	<0.001

Model 1: No adjustment for covariates; Model 2: Adjusted for age, sex, education, marital status, work, smoke, drink, disability, BMI; Model 3: Adjusted for age, sex, education, marital status, work, smoke, drink, disability, BMI, hyperlipidemia, DM, HD, lipid-lowering medication, glucose-lowering medication, antihypertensive medication, white blood cell count, mean corpuscular volume, platelet count, blood urea nitrogen, serum creatinine, total cholesterol, triglycerides, high-density lipoprotein cholesterol, low-density lipoprotein cholesterol, uric acid, hemoglobin. HR, Hazard Ratio; CI, confidence interval; eGDR, estimated glucose disposal rate; hsCRP, high sensitivity C-reactive protein; BMI, body mass index; DM, diabetes mellitus; HD,

heart disease.

Supplementary Table 8. Association of combined eGDR and hsCRP with stroke risk using the clinical hsCRP cutoff (3.0 mg/L)

Variable	Event n(%)	Model 1 HR (95%CI)	P value	Model 2 HR (95%CI)	P value	Model 3 HR (95%CI)	P value
eGDR&hsCRP							
eGDR<9.92&hsCRP≥3	132 (14.4)	Ref		Ref		Ref	
eGDR<9.92&hsCRP<3	428 (12.1)	0.82 (0.68, 1.00)	0.050	0.90 (0.74, 1.09)	0.288	0.93 (0.77, 1.14)	0.492
eGDR≥9.92&hsCRP≥3	45 (7.2)	0.48 (0.34, 0.67)	<0.001	0.58 (0.41, 0.82)	0.002	0.73 (0.51, 1.05)	0.089
eGDR≥9.92&hsCRP<3	210 (5.4)	0.36 (0.29, 0.44)	<0.001	0.47 (0.37, 0.59)	<0.001	0.60 (0.47, 0.77)	<0.001

Model 1: No adjustment for covariates; Model 2: Adjusted for age, sex, education, marital status, work, smoke, drink, disability, BMI; Model 3: Adjusted for age, sex, education, marital status, work, smoke, drink, disability, BMI, hyperlipidemia, DM, HD, lipid-lowering medication, glucose-lowering medication, antihypertensive medication. HR, Hazard Ratio; CI, confidence interval; eGDR, estimated glucose disposal rate; hsCRP, high sensitivity C-reactive protein; BMI, body mass index; DM, diabetes mellitus; HD, heart disease.

Supplementary Table 9. Association of combined TyG index and hsCRP with stroke risk

Variable	Event n(%)	Model 1 HR (95%CI)	P value	Model 2 HR (95%CI)	P value	Model 3 HR (95%CI)	P value
TyG≥8.61&hsCRP≥1.03	312 (12.5)	Ref		Ref		Ref	
TyG≥8.61&hsCRP<1.03	179 (9.2)	0.72 (0.60, 0.87)	0.001	0.83 (0.69, 1.00)	0.045	0.88 (0.73, 1.07)	0.198
TyG<8.61&hsCRP≥1.03	193 (9.9)	0.78 (0.66, 0.94)	0.008	0.85 (0.71, 1.03)	0.093	0.95 (0.79, 1.15)	0.608
TyG<8.61&hsCRP<1.03	131 (5.2)	0.40 (0.32, 0.49)	<0.001	0.49 (0.39, 0.6)	<0.001	0.55 (0.44, 0.68)	<0.001

Model 1: No adjustment for covariates; Model 2: Adjusted for age, sex, education, marital status, work, smoke, drink, disability, BMI; Model 3: Adjusted for age, sex, education, marital status, work, smoke, drink, disability, BMI, hyperlipidemia, DM, HD, lipid-lowering medication, glucose-lowering medication, antihypertensive medication. HR, Hazard Ratio; CI, confidence interval; TyG, triglyceride-glucose; hsCRP, high sensitivity C-reactive protein; BMI, body mass index; DM, diabetes mellitus; HD, heart disease.

Supplementary Table 10. Interaction analyses between low eGDR and high hsCRP on stroke risk

Scale	Measure	Estimate (95% CI)	<i>P</i> value
Multiplicative	Product term HR	0.96 (0.71–1.31)	0.811
Additive	RERI	0.129 (–0.351–0.538)	—
Additive	AP	0.063 (–0.172–0.262)	—
Additive	SI	1.141 (0.744–2.156)	—