

**Supplementary Table 1: Original definition and modification of ICH.**

<b>Component</b>	<b>Original definition</b>	<b>Modification</b>
Smoking	0 for current smokers 1 for former smokers who quit smoking for <1 year 2 for never smokers or former smokers who quit smoking for no <1 year	0 for current smokers 1 for former smokers who quit smoking for <10 years 2 for never smokers or former smokers who quit smoking for no <10 years
Physical activity	0 for no physical activity 1 for moderate to vigorous physical activity for 1–149 min/week 2 for moderate to vigorous physical activity $\geq 150$ min/week	0 for the lowest tertile of exercise time (DFTJ cohort/CKB study) or none (Kailuan study) 1 for the second tertile of exercise time (DFTJ cohort/CKB study) or 1–80 min/week (Kailuan study) 2 for the highest tertile of exercise time (DFTJ cohort/CKB study) or >80 min/week (Kailuan study)
Diet	0 for 0–1 healthy diet component* of the AHA's recommendation 1 for 2–3 healthy diet components* of the AHA's recommendation 2 for 4–5 healthy diet components* of the AHA's recommendation	0 for 0–1 healthy diet component <sup>†</sup> (DFTJ cohort/CKB study) or daily salt intakes >12 g (Kailuan study) 1 for 2 healthy diet components <sup>†</sup> (DFTJ cohort/CKB study) or daily salt intakes 6–12 g (Kailuan study) 2 for 3 healthy diet components <sup>†</sup> (DFTJ cohort/CKB study) or daily salt intakes <6 g (Kailuan study)
BMI	0 for BMI $\geq 30.0$ kg/m <sup>2</sup> 1 for BMI 25.0–29.9 kg/m <sup>2</sup> 2 for BMI <25.0 kg/m <sup>2</sup>	0 for BMI <18.5 or $\geq 30.0$ kg/m <sup>2</sup> 1 for BMI 25.0–29.9 kg/m <sup>2</sup> 2 for BMI 18.5–24.9 kg/m <sup>2</sup>
Blood pressure	0 for SBP $\geq 140$ mmHg or DBP $\geq 90$ mmHg 1 for SBP 120–139 mmHg or DBP 80–89 mmHg, or SBP <120 mmHg and DBP <80 mmHg with treatment 2 for SBP <120 mmHg and DBP <80 mmHg without	0 for SBP $\geq 140$ mmHg or DBP $\geq 90$ mmHg 1 for SBP 120–139 mmHg or DBP 80–89 mmHg, or SBP <120 mmHg and DBP <80 mmHg with treatment 2 for SBP <120 mmHg and DBP <80 mmHg without

	treatment	treatment
Blood glucose	0 for FBG $\geq 7.0$ mmol/L	0 for FBG $\geq 7.0$ mmol/L or random blood glucose $\geq 11.1$ mmol/L
	1 for FBG 5.6–6.9 mmol/L, or FBG $< 5.6$ mmol/L with treatment	1 for FBG 5.6–6.9 mmol/L or random blood glucose 7.8–11.0 mmol/L, or FBG $< 5.6$ mmol/L or random blood glucose $< 7.8$ mmol/L with treatment
	2 for FBG $< 5.6$ mmol/L without treatment	2 for FBG $< 5.6$ mmol/L or random blood glucose $< 7.8$ mmol/L without treatment
Blood lipid	0 for TC $\geq 6.2$ mmol/L	0 for LDL-C $\geq 4.1$ mmol/L
	1 for TC 5.2–6.1 mmol/L, or TC $< 5.2$ mmol/L with treatment	1 for LDL-C 3.4–4.0 mmol/L, or LDL-C $< 3.4$ mmol/L with treatment
	2 for TC $< 5.2$ mmol/L without treatment	2 for LDL-C $< 3.4$ mmol/L without treatment

AHA: American Heart Association; BMI: Body mass index; CKB: China Kadoorie Biobank; DBP: Diastolic blood pressure; DFTJ: Dongfeng-Tongji; FBG: Fasting blood glucose; ICH: Ideal cardiovascular health; LDL-C: Low-density lipoprotein cholesterol; SBP: Systolic blood pressure; TC: Total cholesterol. \*Fruits and vegetables  $\geq 4.5$  cups per day, fish more than two 3.5-oz servings per week (preferably oily fish), fiber-rich whole grains more than three 1-oz-equivalent servings per day, sodium  $< 1500$  mg/day, and sugar-sweetened beverages  $\leq 450$  kcal (36 oz)/week. †Three food groups were used to evaluate the diet. Daily vegetable intake, daily fruit intake, and no daily red meat intake were defined as healthy diet components.

**Supplementary Table 2: Baseline characteristics of study population in the CKB study according to ICH score\*.**

Characteristics	Participants, <i>n</i> (%)		
	ICH score 0–6 points ( <i>N</i> = 3339)	7–9 points ( <i>N</i> = 16,399)	10–14 points ( <i>N</i> = 13,928)
Age (years), mean (SD)	61.7 (9.9)	59.8 (10.1)	54.6 (9.7)
Female	852 (25.5)	7828 (47.7)	10,192 (73.2)
Married	2840 (85.1)	13,907 (84.8)	12,607 (90.5)
High school or higher	564 (16.9)	2446 (14.9)	2733 (19.6)
Annual household income (yuan)			
≥20,000	1424 (42.7)	8143 (49.7)	8404 (60.3)
10,000–19,999	820 (24.6)	3756 (22.9)	2863 (20.6)
5000–9999	598 (17.9)	2469 (15.1)	1743 (12.5)
<5000	497 (14.9)	2031 (12.4)	918 (6.6)
Occupation			
Agriculture and related workers	1000 (30.0)	6418 (39.1)	5657 (40.6)
Factory worker	176 (5.3)	1378 (8.4)	1955 (14.0)
Administrator/manager	51 (1.5)	253 (1.5)	459 (3.3)
Professional/technical	36 (1.1)	207 (1.3)	373 (2.7)
Sales and service workers	51 (1.5)	324 (2.0)	544 (3.9)
Others	2025 (60.7)	7819 (47.7)	4940 (35.5)
Rural region	1994 (59.7)	10,854 (66.2)	8895 (63.9)
Alcohol consumption			
Never drinking	2163 (64.8)	12,555 (76.6)	12,431 (89.3)
Former drinking	199 (6.0)	511 (3.1)	175 (1.3)
Current drinking	977 (29.3)	3333 (20.3)	1322 (9.5)
ICH			
Cigarette smoking	852 (25.5)	9510 (58.0)	12,462 (89.5)
Physical activity	192 (5.8)	3574 (21.8)	7484 (53.7)
Diet	42 (1.3)	541 (3.3)	1721 (12.4)
Body weight	937 (28.1)	8621 (52.6)	10,677 (76.7)
Blood pressure	61 (1.8)	1282 (7.8)	4836 (34.7)
Blood glucose	1892 (56.7)	14,061 (85.7)	13,465 (96.7)
Blood lipid	2841 (85.1)	15,563 (94.9)	13,752 (98.7)

CKB: China Kadoorie Biobank; ICH: Ideal cardiovascular health. \*Differences among groups were tested using analysis of variance for continuous variables and chi-squared test for categorical variables. All *P* values across groups were <0.001.

**Supplementary Table 3: Baseline characteristics of study population in the DFTJ cohort according to ICH score.**

<b>Characteristics</b>	<b>Participants, <i>n</i> (%)</b>		
	<b>ICH score 0–6 points (<i>N</i> = 2497)</b>	<b>7–9 points (<i>N</i> = 11,669)</b>	<b>10–14 points (<i>N</i> = 12,814)</b>
Age (years), mean (SD)	63.8 (7.3)	63.0 (7.8)	60.1 (8.2)
Female	742 (29.7)	5541 (47.5)	8782 (68.5)
Married	2277 (91.2)	10,531 (90.3)	11,588 (90.4)
High school or higher	894 (35.8)	4290 (36.8)	5848 (45.6)
Alcohol consumption			
Never drinking	1292 (51.7)	7843 (67.2)	10,077 (78.6)
Former drinking	168 (6.7)	593 (5.1)	439 (3.4)
Current drinking	1037 (41.5)	3233 (27.7)	2298 (17.9)
ICH			
Cigarette smoking	938 (37.6)	8042 (68.9)	11,720 (91.5)
Physical activity	232 (9.3)	2567 (22.0)	5916 (46.2)
Diet	428 (17.1)	4338 (37.2)	8283 (64.6)
Body weight	600 (24.0)	5512 (47.2)	9698 (75.7)
Blood pressure	74 (3.0)	1120 (9.6)	4324 (33.7)
Blood glucose	348 (13.9)	4037 (34.6)	8361 (65.3)
Blood lipid	892 (35.7)	6994 (59.9)	10,563 (82.4)

DFTJ: Dongfeng-Tongji; ICH: Ideal cardiovascular health. \*Differences among groups were tested using analysis of variance for continuous variables and chi-squared test for categorical variables. All *P* values across groups were <0.001.

**Supplementary Table 4: Baseline characteristics of study population in the Kailuan study according to ICH score.**

Characteristics	Participants, <i>n</i> (%)		
	0–6 points ( <i>N</i> = 14,609)	7–9 points ( <i>N</i> = 65,758)	10–14 points ( <i>N</i> = 57,151)
Age (years)	49.8 (11.4)	50.1 (13.1)	47.3 (14.3)
Female	594 (4.1)	7666 (11.7)	18,270 (32.0)
Married	14,021 (96.0)	62,622 (95.2)	53,054 (92.8)
High school or higher	3356 (23.0)	14,730 (22.4)	17,162 (30.0)
Monthly household income per capita ≤1000 yuan	9956 (68.2)	49,115 (74.7)	42,973 (75.2)
Alcohol consumption			
Never drinking	4355 (29.8)	34,497 (52.5)	43,040 (75.3)
Former drinking	527 (3.6)	1846 (2.8)	921 (1.6)
Current drinking	9727 (66.6)	29,415 (44.7)	13,190 (23.1)
ICH			
Cigarette smoking	2119 (14.5)	32,505 (49.4)	50,213 (87.9)
Physical activity	1193 (8.2)	8370 (12.7)	10,141 (17.7)
Diet	690 (4.7)	5552 (8.4)	8649 (15.1)
Body weight	2539 (17.4)	25,590 (38.9)	42,530 (74.4)
Blood pressure	280 (1.9)	6740 (10.3)	21,660 (37.9)
Blood glucose	4625 (31.7)	41,017 (62.4)	50,859 (89.0)
Blood lipid	9156 (62.7)	56,920 (86.6)	54,872 (96.0)

ICH: Ideal cardiovascular health. \*Differences among groups were tested using analysis of variance for continuous variables and chi-squared test for categorical variables. All *P* values across groups were <0.001.

**Supplementary Table 5: Baseline characteristics of participants included in and excluded from the analysis in three Chinese cohorts.**

Characteristics	CKB study				DFTJ cohort				Kailuan study			
	Included	Excluded	SD	No. null*	Included	Excluded	SD	No. null*	Included	Excluded	SD	No. null*
No. participants	33,666	1863	-	-	26,980	4977	-	-	137,518	15,796	-	-
Age (years), mean (SD)	57.8 (10.3)	51.8 (10.4)	0.01	2	61.7 (8.1)	63.8 (8.3)	0.02	940	48.9 (13.5)	49.7 (16.7)	0.21	1101
Female	18,872 (56.1)	1070 (57.4)	0.03	0	15,065 (55.8)	2531 (58.1)	0.05	621	26,530 (19.3)	3793 (25.0)	0.14	639
Married	29,354 (87.2)	1705 (91.5)	0.14	0	24,396 (90.4)	3751 (87.1)	-0.10	669	129,697 (94.3)	8564 (92.0)	-0.09	6491
High school or higher	5743 (17.1)	367 (19.7)	0.07	0	11,032 (40.9)	1944 (45.5)	0.09	705	35,248 (25.6)	2946 (32.4)	0.15	6692
Alcohol consumption				0				658				6283
Never drinking	27,149 (80.6)	1359 (73.0)	-0.18	-	19,212 (71.2)	3167 (73.3)	0.05	-	81,892 (59.6)	6009 (63.2)	0.07	-
Former drinking	885 (2.6)	29 (1.6)	-0.07	-	1200 (4.4)	194 (4.5)	<0.01	-	3294 (2.4)	312 (3.3)	0.05	-
Current drinking	5632 (16.7)	475 (25.5)	0.22	-	6568 (24.3)	958 (22.2)	-0.05	-	52,332 (38.1)	3192 (33.6)	-0.09	-
ICH‡												
Cigarette smoking	22,824 (67.8)	1251 (67.2)	-0.01	0	20,700 (76.7)	3373 (78.3)	0.04	667	84,837 (61.7)	5994 (69.1)	0.16	7122
Physical activity	11,250 (33.4)	721 (38.7)	0.11	0	8715 (32.3)	1364 (33.8)	0.03	941	19,704 (14.3)	1241 (13.4)	-0.03	6557
Diet	2304 (6.8)	164 (8.8)	0.07	0	13,049 (48.4)	858 (36.6)	-0.24	2632	14,891 (10.8)	974 (10.5)	-0.01	6557
Body weight	20,235 (60.1)	1156 (62.1)	0.04	0	15,810 (58.6)	2071 (59.2)	0.01	1476	70,659 (51.4)	7213 (51.6)	<0.01	1806
Blood pressure	6179 (18.4)	543 (29.2)	0.26	0	5518 (20.5)	664 (18.8)	-0.04	1447	28,680 (20.9)	3188 (21.9)	0.02	1254
Blood glucose	29,418 (87.4)	1522 (90.2)	0.09	176	12,746 (47.2)	1368 (39.9)	-0.15	1544	96,501 (70.2)	9456 (69.2)	-0.02	2129
Blood lipid	32,156 (95.5)	166 (95.4)	<0.01	1689	18,449 (68.4)	2669 (74.7)	0.14	1406	120,948 (88.0)	12,348 (84.5)	-0.10	1191

CKB: China Kadoorie Biobank; DFTJ: Dongfeng-Tongji; ICH: Ideal cardiovascular health; SD: Standardized difference between those excluded from and included in the analysis. \*The number of participants with missing information.

**Supplementary Table 6: HR (95% CI) of all-cause mortality associated with each ICH metric: Pooled results of three prospective cohorts in Chinese adults\*.**

Metrics	Poor	Level	
		Intermediate	Ideal
Smoking	Reference	0.94 (0.86–1.02)	0.77 (0.66–0.90)
Physical activity	Reference	0.92 (0.84–1.02)	0.87 (0.83–0.92)
BMI	Reference	0.71 (0.61–0.82)	0.80 (0.71–0.89)
Diet	Reference	0.94 (0.89–0.99)	0.87 (0.76–0.99)
Blood pressure	Reference	0.73 (0.63–0.85)	0.64 (0.52–0.79)
Blood glucose	Reference	0.65 (0.62–0.68)	0.59 (0.54–0.65)
Blood LDL-C	Reference	0.86 (0.67–1.11)	0.85 (0.61–1.18)
Blood TC	Reference	0.91 (0.83–1.01)	0.93 (0.81–1.06)
Blood HDL-C	Reference	0.96 (0.89–1.03)	0.98 (0.91–1.06)
Blood triglyceride	Reference	1.01 (0.96–1.06)	1.08 (0.95–1.22)

BMI: Body mass index; CI: Confidence interval; CKB: China Kadoorie Biobank; HDL-C: High-density lipoprotein cholesterol; HR: Hazard ratio; ICH: Ideal cardiovascular health; LDL-C: Low-density lipoprotein cholesterol; TC: Total cholesterol. \*The Cox regression model included the components of ICH metrics, age, sex, region (only adjusted in the CKB study), marital status, education level, income level (adjusted in the CKB and Kailuan studies), occupation (only adjusted in the CKB study) and alcohol drinking. Poor, intermediate, and ideal levels of each metric are displayed in Supplementary Table 1. Participants from each cohort were divided into tertiles according to their HDL-C level, and the ideal level was the top tertile without treatment, the intermediate level was the top tertile with treatment or medium tertile, and the poor level was the bottom level. For triglyceride, the ideal level was <1.7 mmol/L without treatment, the intermediate level was <1.7 mmol/L with treatment or 1.7–2.2 mmol/L, and the poor level was  $\geq 2.3$  mmol/L.

**Supplementary Table 7: Cohort-specific associations between ICH score and all-cause and cause-specific mortality\*.**

Causes of mortality	ICH score			
	0–6 points	7–9 points	10–14 points	1-point increase
<b>All-cause mortality</b>				
CKB study				
Number of deaths	1206	3392	1275	5873
Person-years	20,995	102,508	82,397	205,900
HR (95% CI)	Reference	0.64 (0.60–0.69)	0.43 (0.40–0.47)	0.85 (0.83–0.86)
DFTJ cohort				
Number of deaths	374	1164	706	2244
Person-years	20,598	98,440	106,423	225,461
HR (95% CI)	Reference	0.71 (0.63–0.79)	0.53 (0.47–0.60)	0.89 (0.87–0.91)
Kailuan study				
Number of deaths	1434	6693	3932	12,059
Person-years <sup>†</sup>	160,146	733,942	643,405	1,537,493
HR (95% CI)	Reference	0.85 (0.80–0.90)	0.63 (0.59–0.67)	0.90 (0.89–0.91)
<b>CVD mortality</b>				
CKB study				
Number of deaths	1017	2759	1013	4789
HR (95% CI)	Reference	0.61 (0.57–0.66)	0.39 (0.36–0.43)	0.83 (0.82–0.85)
DFTJ cohort				
Number of deaths	148	455	230	833
HR (95% CI)	Reference	0.70 (0.58–0.85)	0.44 (0.36–0.55)	0.86 (0.83–0.89)
Kailuan study				
Number of deaths	310	1460	772	2542
HR (95% CI)	Reference	0.78 (0.69–0.88)	0.51 (0.44–0.58)	0.86 (0.84–0.88)
<b>IHD mortality</b>				
CKB study				
Number of deaths	292	698	302	1292
HR (95% CI)	Reference	0.59 (0.51–0.68)	0.41 (0.34–0.49)	0.84 (0.81–0.87)
DFTJ cohort				
Number of deaths	70	227	114	411
HR (95% CI)	Reference	0.74 (0.57–0.97)	0.47 (0.35–0.63)	0.86 (0.82–0.90)
Kailuan study				
Number of deaths	104	497	261	862
HR (95% CI)	Reference	0.75 (0.61–0.94)	0.47 (0.37–0.60)	0.84 (0.81–0.87)
<b>Stroke mortality</b>				
CKB study				
Number of deaths	648	1928	660	3236
HR (95% CI)	Reference	0.69 (0.63–0.75)	0.43 (0.38–0.48)	0.84 (0.83–0.86)
DFTJ cohort				
Number of deaths	61	171	87	319



HR (95% CI)	Reference	0.65 (0.48–0.87)	0.41 (0.29–0.58)	0.84 (0.80–0.89)
Kailuan study				
Number of deaths	139	651	317	1107
HR (95% CI)	Reference	0.80 (0.67–0.97)	0.49 (0.40–0.61)	0.86 (0.83–0.89)
<b>Respiratory disease mortality</b>				
CKB study				
Number of deaths	104	225	66	395
HR (95% CI)	Reference	0.66 (0.52–0.83)	0.50 (0.37–0.69)	0.87 (0.82–0.92)
DFTJ cohort				
Number of deaths	33	94	64	191
HR (95% CI)	Reference	0.65 (0.44–0.98)	0.61 (0.40–0.94)	0.91 (0.85–0.98)
Kailuan study				
Number of deaths	58	293	175	526
HR (95% CI)	Reference	0.78 (0.58–1.04)	0.55 (0.40–0.75)	0.90 (0.86–0.95)
<b>Cancer mortality</b>				
CKB study				
Number of deaths	97	377	174	648
HR (95% CI)	Reference	1.11 (0.88–1.40)	1.08 (0.82–1.41)	1.00 (0.96–1.04)
DFTJ cohort				
Number of deaths	122	388	264	774
HR (95% CI)	Reference	0.76 (0.62–0.93)	0.64 (0.51–0.80)	0.93 (0.90–0.97)
Kailuan study				
Number of deaths	193	1017	657	1867
HR (95% CI)	Reference	1.06 (0.90–1.24)	0.93 (0.79–1.10)	0.97 (0.94–0.99)

CI: Confidence interval; CKB: China Kadoorie Biobank; CVD: Cardiovascular disease; DFTJ:

Dongfeng-Tongji; HR: Hazard ratio; ICH: Ideal cardiovascular health; IHD: Ischemic heart disease.

\*Models were adjusted for age, sex, region (only adjusted in CKB study), marital status, education level, income level (adjusted in CKB and Kailuan studies), occupation (only adjusted in CKB study), and alcohol drinking. †In the Kailuan study, person-years for cause-specific mortality in the ICH scores of 0–6, 7–9, and 10–14 points were 119,941, 553,854, and 482,040, respectively.

**Supplementary Table 8: Subgroup analyses of associations between ICH score and all-cause mortality: Pooled results of three prospective cohorts in Chinese adults\*.**

Subgroup	ICH score			1-point increase	<i>P</i> <sub>between-group</sub>
	0–6 points	7–9 points	10–14 points		
Age <60 years	Reference	0.69 (0.55–0.86)	0.43 (0.33–0.56)	0.85 (0.82–0.89)	0.26
Age ≥60 years	Reference	0.77 (0.61–0.99)	0.59 (0.41–0.84)	0.90 (0.84–0.95)	
Females	Reference	0.66 (0.59–0.75)	0.46 (0.41–0.51)	0.86 (0.84–0.89)	0.54
Males	Reference	0.74 (0.61–0.89)	0.54 (0.42–0.70)	0.88 (0.84–0.92)	
High school or higher	Reference	0.73 (0.65–0.82)	0.46 (0.36–0.58)	0.86 (0.82–0.90)	0.45
Middle school or less	Reference	0.73 (0.59–0.90)	0.54 (0.42–0.69)	0.88 (0.85–0.92)	
Never drinking	Reference	0.72 (0.57–0.92)	0.52 (0.39–0.70)	0.88 (0.84–0.92)	0.70
Ever drinking	Reference	0.76 (0.67–0.87)	0.55 (0.47–0.64)	0.89 (0.86–0.92)	
No diabetes	Reference	0.78 (0.64–0.95)	0.59 (0.46–0.77)	0.90 (0.86–0.94)	0.70
With diabetes	Reference	0.81 (0.63–1.05)	0.60 (0.39–0.92)	0.91 (0.84–0.99)	
No hypertension	Reference	0.70 (0.49–0.98)	0.56 (0.41–0.75)	0.90 (0.88–0.93)	0.92
With hypertension	Reference	0.78 (0.67–0.92)	0.64 (0.54–0.76)	0.91 (0.88–0.94)	

CIs: Confidence intervals; CKB: China Kadoorie Biobank; HRs: Hazard ratios; ICH: Ideal cardiovascular health. \*Results are presented as pooled HRs (95% CIs). Models were adjusted for age, sex, region (only adjusted in the CKB study), marital status, education level, income level (adjusted in the CKB and Kailuan studies), occupation (only adjusted in the CKB study) and alcohol drinking. Meta-regressions were used to measure whether the differences of the HRs associated with a 1-point increase in ICH score between groups were statistically significant.

**Supplementary Table 9: Subgroup analyses of associations between ICH score and CVD mortality:**

**Pooled results of three prospective cohorts in Chinese adults\*.**

Subgroup	ICH score				<i>P</i> <sub>between n-group</sub>
	0–6 points	7–9 points	10–14 points	1-point increase	
Age <60 years	Reference	0.59 (0.53–0.66)	0.32 (0.28–0.36)	0.80 (0.78–0.82)	0.036
Age ≥60 years	Reference	0.76 (0.58–0.99)	0.53 (0.38–0.75)	0.87 (0.83–0.92)	
Females	Reference	0.63 (0.55–0.71)	0.34 (0.24–0.48)	0.80 (0.73–0.87)	0.27
Males	Reference	0.70 (0.57–0.85)	0.47 (0.38–0.59)	0.86 (0.83–0.89)	
High school or higher	Reference	0.61 (0.51–0.74)	0.38 (0.28–0.52)	0.82 (0.78–0.87)	0.23
Middle school or less	Reference	0.69 (0.58–0.83)	0.45 (0.39–0.53)	0.85 (0.83–0.87)	
Never drinking	Reference	0.68 (0.56–0.81)	0.43 (0.36–0.52)	0.84 (0.83–0.85)	0.25
Ever drinking	Reference	0.70 (0.61–0.80)	0.48 (0.41–0.55)	0.87 (0.83–0.90)	
No diabetes	Reference	0.76 (0.61–0.95)	0.51 (0.40–0.65)	0.86 (0.84–0.89)	0.24
With diabetes	Reference	0.77 (0.64–0.92)	0.58 (0.38–0.90)	0.91 (0.84–0.98)	
No hypertension	Reference	0.63 (0.47–0.84)	0.49 (0.39–0.62)	0.96 (0.80–1.16)	0.45
With hypertension	Reference	0.78 (0.67–0.90)	0.61 (0.54–0.70)	0.90 (0.88–0.92)	

CIs: Confidence intervals; CKB: China Kadoorie Biobank; CVD: Cardiovascular disease; HRs: Hazard ratios; ICH: Ideal cardiovascular health. \*Results are presented as pooled HRs (95% CIs). Models were adjusted for age, sex, region (only adjusted in the CKB study), marital status, education level, income level (adjusted in the CKB and Kailuan studies), occupation (only adjusted in the CKB study) and alcohol drinking. Meta-regressions were used to measure whether the differences of the HRs associated with a 1-point increase in ICH score between groups were statistically significant.

**Supplementary Table 10: Subgroup analyses of associations between ICH score and respiratory mortality: Pooled results of three prospective cohorts in Chinese adults\*.**

Subgroup	ICH score				<i>P</i> <sub>between-group</sub>
	0–6 points	7–9 points	10–14 points	1-point increase	
Age <60 years	Reference	0.50 (0.34–0.74)	0.35 (0.22–0.56)	0.82 (0.76–0.89)	0.12
Age ≥60 years	Reference	0.78 (0.65–0.94)	0.64 (0.50–0.82)	0.95 (0.86–1.06)	
Females	Reference	0.72 (0.45–1.15)	0.61 (0.37–1.01)	0.91 (0.83–0.98)	0.80
Males	Reference	0.70 (0.58–0.83)	0.53 (0.40–0.71)	0.89 (0.85–0.93)	
High school or higher	Reference	0.62 (0.40–0.96)	0.39 (0.23–0.65)	0.87 (0.79–0.95)	0.52
Middle school or less	Reference	0.71 (0.59–0.85)	0.57 (0.46–0.71)	0.90 (0.87–0.93)	
Never drinking	Reference	0.69 (0.55–0.86)	0.55 (0.43–0.71)	0.89 (0.85–0.93)	0.94
Ever drinking	Reference	0.70 (0.54–0.91)	0.52 (0.37–0.74)	0.89 (0.84–0.95)	
No diabetes	Reference	0.63 (0.52–0.77)	0.51 (0.41–0.64)	0.89 (0.86–0.93)	0.39
With diabetes	Reference	0.91 (0.47–1.73)	0.52 (0.25–1.09)	0.93 (0.85–1.02)	
No hypertension	Reference	0.70 (0.37–1.34)	0.56 (0.33–0.96)	0.92 (0.86–0.98)	0.52
With hypertension	Reference	0.71 (0.59–0.86)	0.59 (0.45–0.76)	0.89 (0.85–0.94)	

CI: Confidence intervals; CKB: China Kadoorie Biobank; HRs: Hazard ratios; ICH: Ideal cardiovascular health. \*Results are presented as pooled HRs (95% CIs). Models were adjusted for age, sex, region (only adjusted in the CKB study), marital status, education level, income level (adjusted in the CKB and Kailuan studies), occupation (only adjusted in the CKB study) and alcohol drinking. Meta-regressions were used to measure whether the differences of the HRs associated with a 1-point increase in ICH score between groups were statistically significant.

**Supplementary Table 11: Subgroup analyses of associations between ICH score and cancer mortality: Pooled results of three prospective cohorts in Chinese adults\*.**

Subgroup	ICH score			1-point increase	<i>P</i> <sub>between-groups</sub>
	0–6 points	7–9 points	10–14 points		
Age <60 years	Reference	1.14 (0.95–1.38)	0.94 (0.77–1.15)	0.96 (0.93–0.99)	0.96
Age ≥60 years	Reference	0.92 (0.72–1.17)	0.83 (0.62–1.12)	0.96 (0.92–1.01)	
Females	Reference	0.74 (0.55–1.00)	0.80 (0.59–1.08)	0.98 (0.94–1.03)	0.59
Males	Reference	1.02 (0.79–1.32)	0.83 (0.62–1.11)	0.96 (0.91–1.01)	
High school or higher	Reference	1.01 (0.69–1.49)	0.71 (0.52–0.95)	0.93 (0.89–0.97)	0.23
Middle school or less	Reference	0.95 (0.76–1.18)	0.88 (0.67–1.16)	0.97 (0.93–1.01)	
					>0.9
Never drinking	Reference	0.92 (0.70–1.19)	0.84 (0.62–1.14)	0.96 (0.93–0.99)	9
Ever drinking	Reference	1.03 (0.83–1.28)	0.83 (0.65–1.05)	0.96 (0.93–1.00)	
No diabetes	Reference	0.97 (0.68–1.37)	0.89 (0.60–1.30)	0.97 (0.94–1.00)	0.84
With diabetes	Reference	0.99 (0.80–1.22)	0.93 (0.50–1.72)	0.98 (0.89–1.08)	
No hypertension	Reference	1.09 (0.84–1.40)	0.91 (0.70–1.18)	0.95 (0.93–0.98)	0.90
With hypertension	Reference	0.91 (0.71–1.17)	0.84 (0.60–1.18)	0.96 (0.90–1.01)	

CI: Confidence intervals; CKB: China Kadoorie Biobank; HRs: Hazard ratios; ICH: Ideal cardiovascular health. \*Results are presented as pooled HRs (95% CIs). Models were adjusted for age, sex, region (only adjusted in the CKB study), marital status, education level, income level (adjusted in the CKB and Kailuan studies), occupation (only adjusted in the CKB study) and alcohol drinking. Meta-regressions were used to measure whether the differences of the HRs associated with a 1-point increase in ICH score between groups were statistically significant.

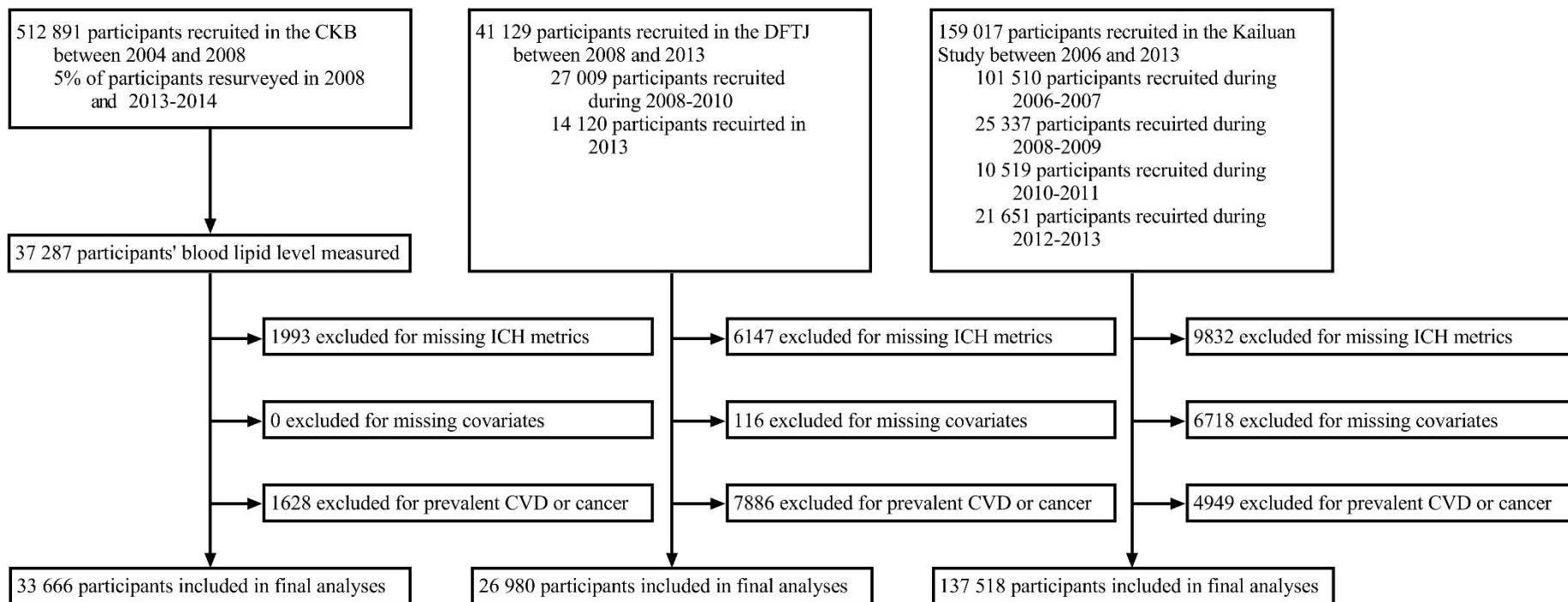
**Supplementary Table 12: Sensitivity analyses: Pooled results of three prospective cohorts in Chinese adults\*.**

Methods and causes of deaths	ICH score			
	0–6 points	7–9 points	10–14 points	1-point increase
Excluding those who died within the first 3 years of follow-ups				
All-cause mortality	Reference	0.74 (0.61–0.90)	0.54 (0.43–0.66)	0.88 (0.85–0.91)
CVD mortality	Reference	0.71 (0.61–0.83)	0.46 (0.41–0.51)	0.85 (0.84–0.87)
Ischemic heart disease mortality	Reference	0.70 (0.56–0.87)	0.45 (0.37–0.54)	0.85 (0.82–0.87)
Stroke mortality	Reference	0.73 (0.66–0.80)	0.49 (0.43–0.55)	0.86 (0.85–0.88)
Respiratory disease mortality	Reference	0.74 (0.61–0.89)	0.53 (0.42–0.66)	0.89 (0.85–0.92)
Cancer mortality	Reference	0.95 (0.75–1.20)	0.82 (0.62–1.10)	0.96 (0.92–0.99)
Using the AHA's definition of ICH (except for diet)				
All-cause mortality	Reference	0.67 (0.53–0.84)	0.49 (0.36–0.65)	0.88 (0.84–0.92)
CVD mortality	Reference	0.63 (0.55–0.73)	0.42 (0.35–0.52)	0.85 (0.82–0.88)
Ischemic heart disease mortality	Reference	0.61 (0.54–0.69)	0.41 (0.36–0.47)	0.84 (0.82–0.86)
Stroke mortality	Reference	0.68 (0.59–0.78)	0.44 (0.38–0.50)	0.85 (0.83–0.88)
Respiratory disease mortality	Reference	0.75 (0.55–1.02)	0.58 (0.43–0.79)	0.91 (0.87–0.95)
Cancer mortality	Reference	0.95 (0.70–1.29)	0.83 (0.61–1.13)	0.96 (0.93–1.00)
Excluding individuals with prevalent emphysema or chronic bronchitis at baseline <sup>†</sup>				
All-cause mortality	Reference	0.74 (0.61–0.90)	0.53 (0.41–0.68)	0.88 (0.84–0.92)
CVD mortality	Reference	0.68 (0.58–0.81)	0.44 (0.37–0.52)	0.85 (0.83–0.87)
Ischemic heart disease mortality	Reference	0.67 (0.56–0.80)	0.43 (0.38–0.49)	0.84 (0.82–0.86)
Stroke mortality	Reference	0.71 (0.62–0.80)	0.44 (0.40–0.49)	0.85 (0.83–0.86)
Respiratory disease mortality	Reference	0.73 (0.60–0.87)	0.57 (0.46–0.71)	0.90 (0.87–0.94)
Cancer mortality	Reference	0.97 (0.80–1.19)	0.86 (0.65–1.14)	0.96 (0.93–1.00)
Adjusting for family history of diabetes, CVD, and cancer				
All-cause mortality	Reference	0.73 (0.60–0.88)	0.52 (0.41–0.67)	0.88 (0.84–0.92)
CVD mortality	Reference	0.69 (0.58–0.81)	0.44 (0.37–0.52)	0.85 (0.83–0.87)
Ischemic heart disease mortality	Reference	0.67 (0.57–0.80)	0.44 (0.39–0.50)	0.85 (0.83–0.86)
Stroke mortality	Reference	0.70 (0.64–0.77)	0.44 (0.39–0.48)	0.85 (0.83–0.86)
Respiratory disease mortality	Reference	0.69 (0.59–0.82)	0.54 (0.44–0.66)	0.89 (0.86–0.92)
Cancer mortality	Reference	0.96 (0.76–1.20)	0.85 (0.64–1.13)	0.96 (0.93–1.00)
Multiple imputation				
All-cause mortality	Reference	0.72 (0.59–0.88)	0.52 (0.40–0.68)	0.88 (0.84–0.92)

CVD mortality	Reference	0.68 (0.58–0.80)	0.44 (0.36–0.54)	0.85 (0.82–0.88)
Ischemic heart disease mortality	Reference	0.67 (0.54–0.82)	0.43 (0.38–0.50)	0.84 (0.83–0.86)
Stroke mortality	Reference	0.71 (0.64–0.79)	0.44 (0.40–0.50)	0.85 (0.83–0.87)
Respiratory disease mortality	Reference	0.71 (0.60–0.83)	0.57 (0.47–0.68)	0.90 (0.87–0.93)
Cancer mortality	Reference	0.95 (0.79–1.16)	0.85 (0.65–1.11)	0.96 (0.93–0.99)

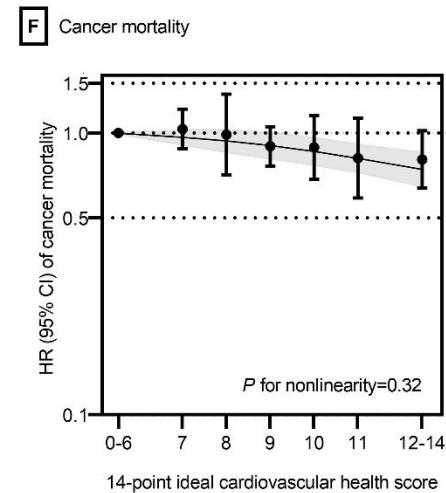
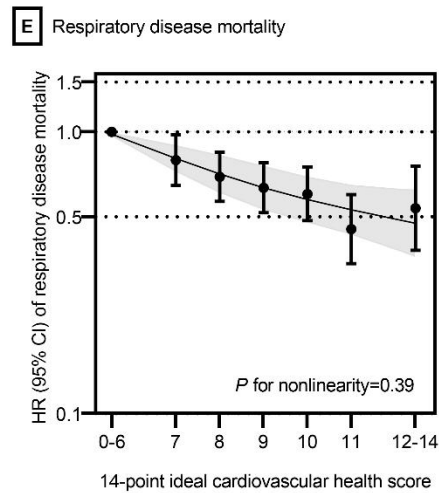
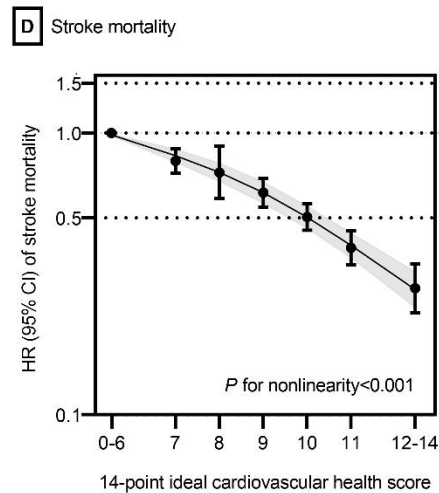
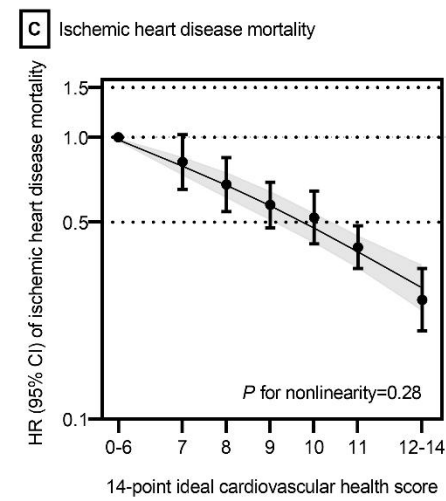
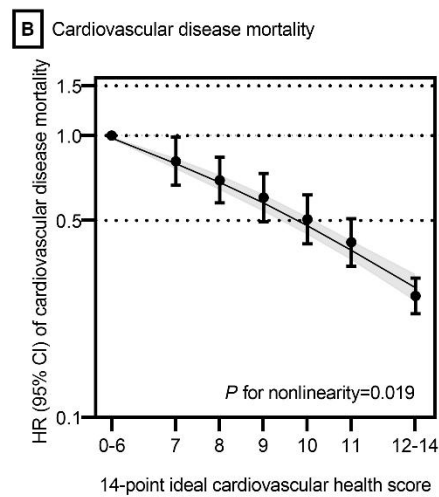
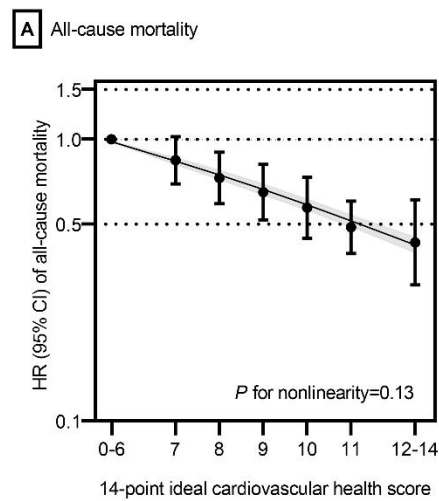
AHA: American Heart Association; CIs: Confidence intervals; CKB: China Kadoorie Biobank; CVD: Cardiovascular disease; DFTJ: Dongfeng-Tongji; HRs: Hazard ratios; ICH: Ideal cardiovascular health.

\*Results are presented as pooled HRs (95% CIs). Models were adjusted for age, sex, region (only adjusted in the CKB study), marital status, education level, income level (adjusted in the CKB and Kailuan studies), occupation (only adjusted in the CKB study) and alcohol drinking. †Only the CKB study and DFTJ cohort collected individuals' disease history of respiratory disease, thus the analysis only excluded individuals with prevalent respiratory disease at baseline in these two cohorts; while all individuals from the Kailuan study were included in the analysis.

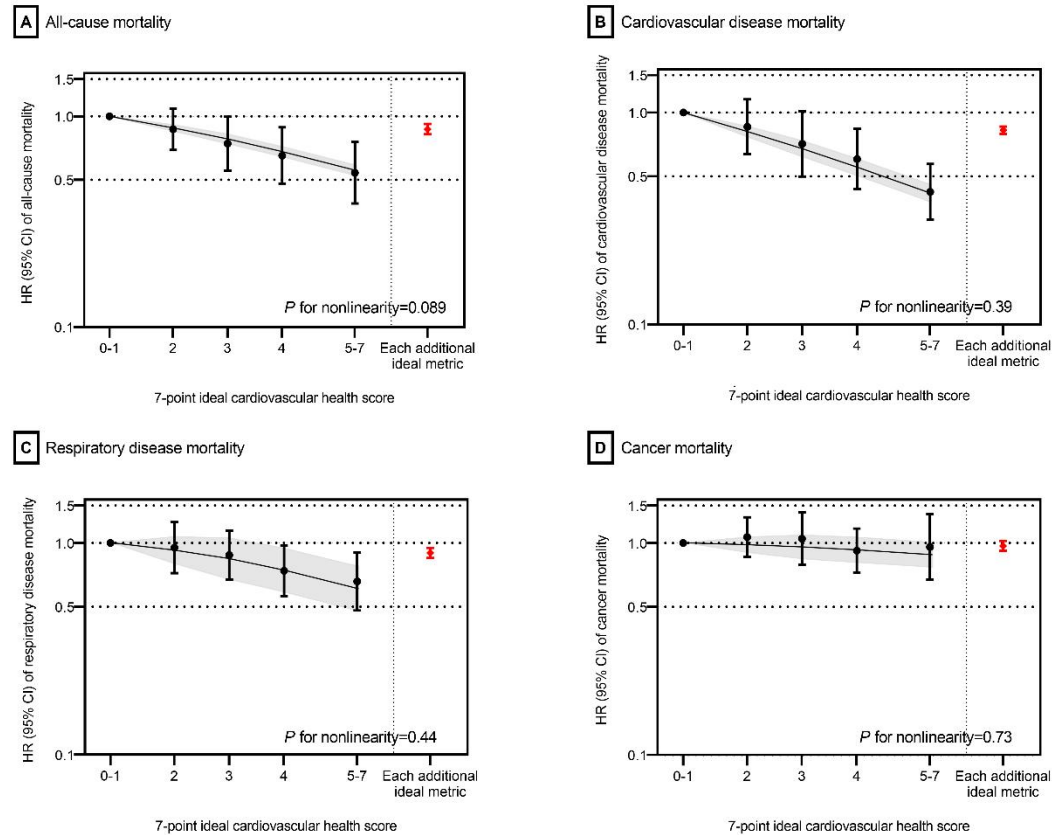


**Supplementary Figure 1:** Flowchart of the study. CKB: China Kadoorie Biobank; CVD: Cardiovascular disease; DFTJ: Dongfeng-Tongji; ICH: Ideal cardiovascular health.

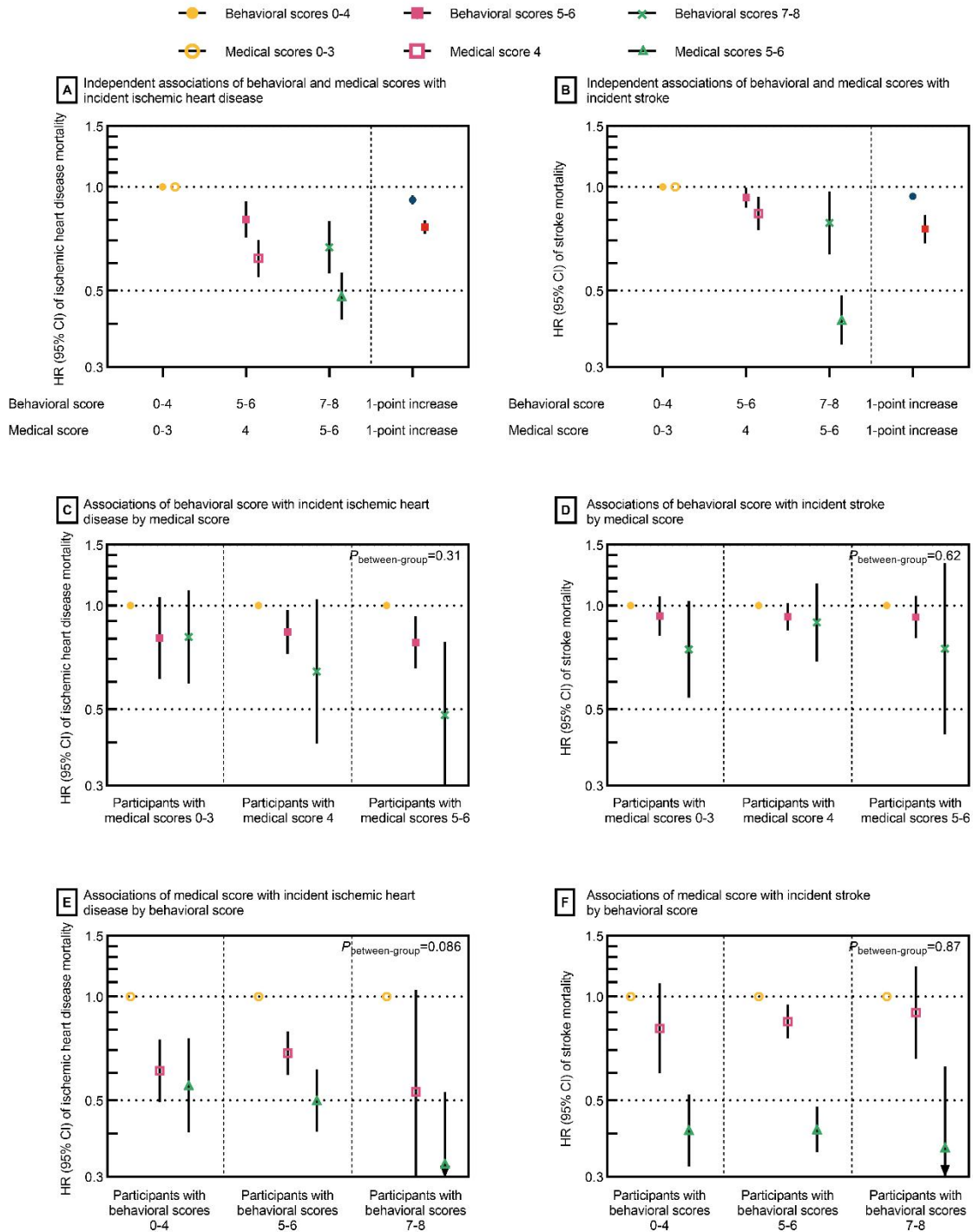




**Supplementary Figure 2:** Dose-response association of 14-point ICH score with Mortality: Pooled Results of Three Prospective Cohorts in Chinese Adults. X-axes showed 14-point ICH scores, and y-axes showed the HRs for all-cause mortality (A), CVD mortality (B), ischemic heart disease mortality (C), stroke mortality (D), respiratory mortality (E), and cancer mortality (F). Black dots denoted HRs compared with participants with 0–6 points in 14-point ICH score, and vertical lines denoted 95% CIs of HRs. Black curves denoted HRs predicted by nonlinear dose-response meta-analyses, and gray zones were 95% CIs of HRs. CIs: Confidence intervals; CVD: Cardiovascular disease; HRs: Hazard ratios; ICH: Ideal cardiovascular health.



**Supplementary Figure 3:** Dose-response association of 7-point ICH score with mortality: Pooled Results of Three Prospective Cohorts in Chinese Adults. X-axes showed 7-point ICH scores (i.e., the number of ideal metrics), and y-axes showed the HRs for all-cause mortality (A), CVD mortality (B), respiratory mortality (C), and cancer mortality (D). Black and red dots respectively denoted HRs compared with participants with 0–1 point and HRs associated with each additional ideal metric (i.e., a 1-point increase in 7-point ICH score), and vertical lines denoted 95% CIs of HRs. Black curves denoted HRs predicted by nonlinear dose-response meta-analyses, and gray zones were 95% CIs of HRs. CIs: Confidence intervals; CVD: Cardiovascular disease; HRs: Hazard ratios; ICH: Ideal cardiovascular health.



**Supplementary Figure 4: Associations of Behavioral and Medical Scores with Mortality from Ischemic Heart Disease and Stroke.**  $P_{\text{between-group}}$  was derived from the meta-regression, which indicated whether the difference in HR associated with 1-point increase of the score across groups was statistically significant. CI: Confidence interval; HR: Hazard ratio.